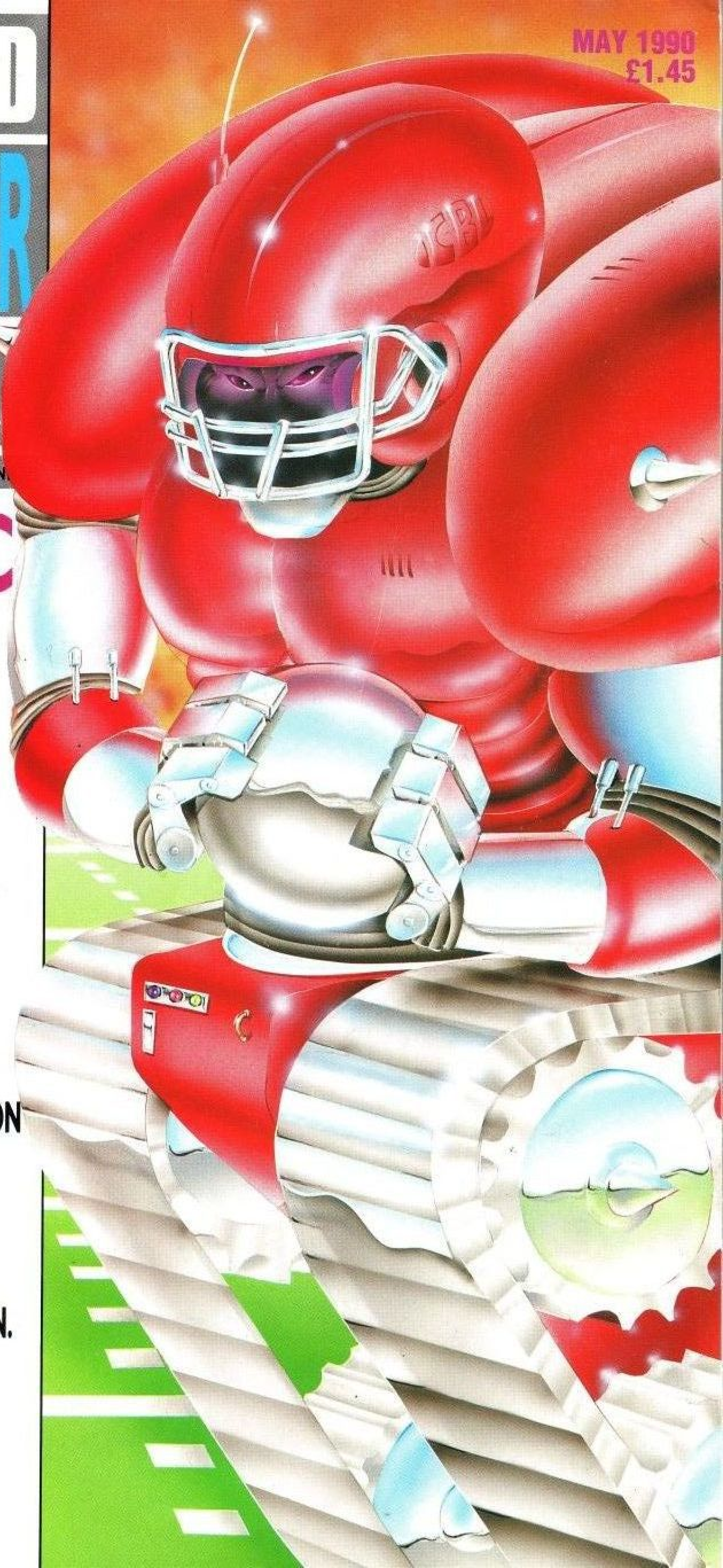
MAY 1990
£1.45

# AMSTRAD COMPUTER USER

THE OFFICIAL AMSTRAD CPC MAGAZINE



## METALLIC MAYHEM

**SPARKS FLY AS THE STEEL GIANTS COLLIDE IN CYBERBALL**

## GRIDIRON GIVEAWAY

**THREE REAL AMERICAN FOOTBALL SHIRTS AND TWENTY BALLS MUST BE WON**

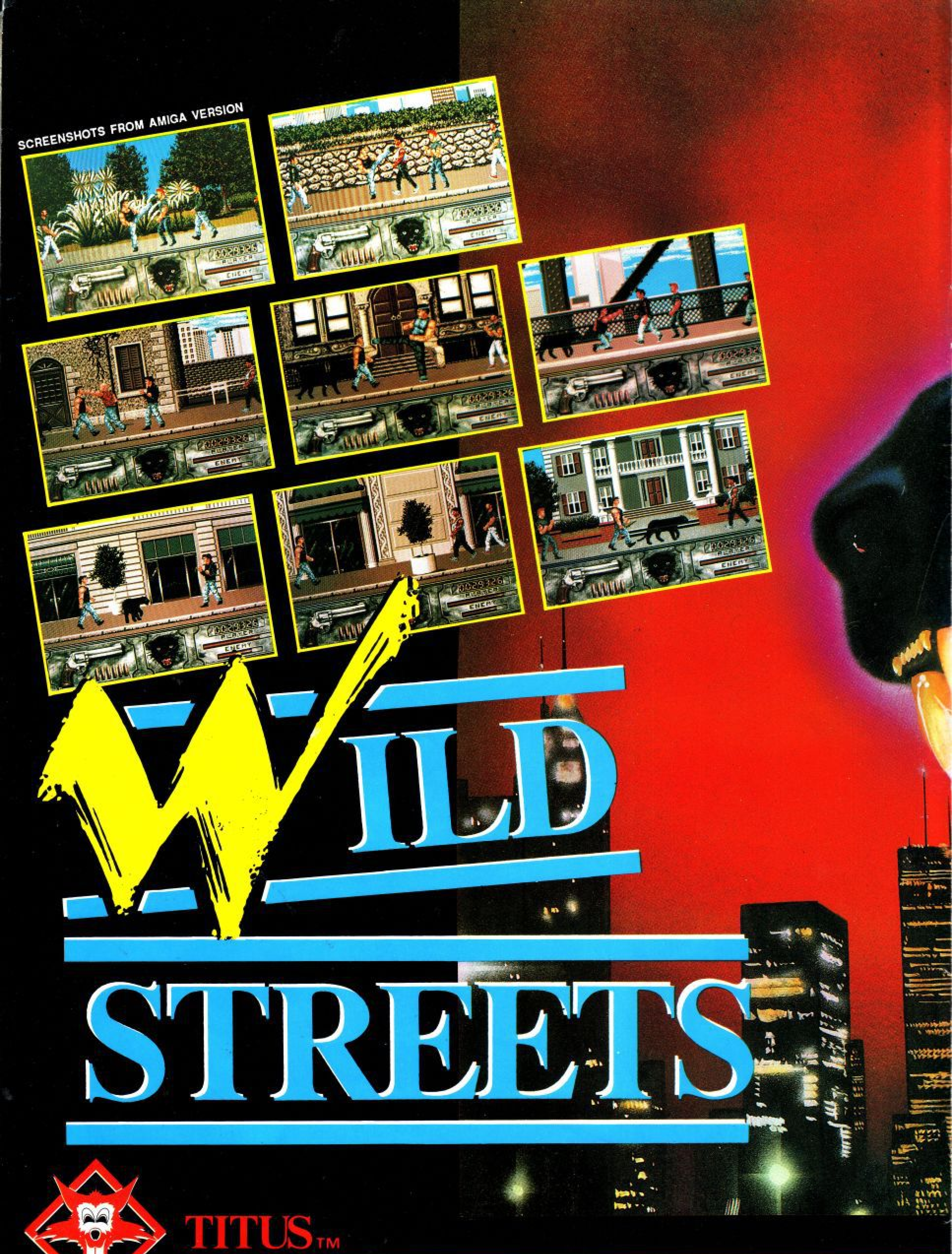
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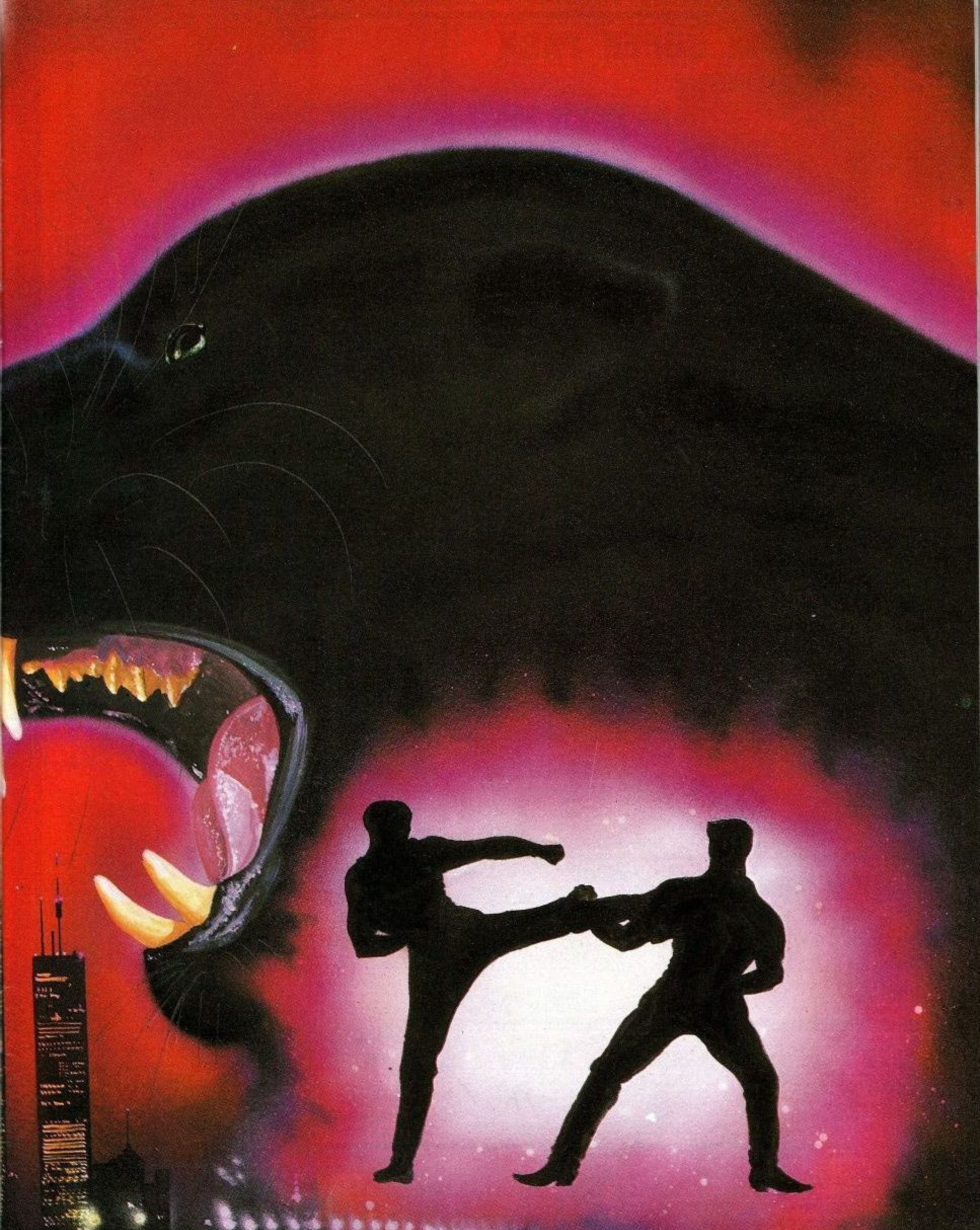
**PROLIFIC PLAYERS AND AN EDUCATION INVESTIGATION.**

ISSN 0952-3049

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WILD STREETS
TITUS™



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# REGULARS







# FEATURES

# LETTERS



## Be serious

Like Mr Pewty (letters – January) I too am a pensioner, a septagenarian one at that, and like him I purchased a 6128 to keep my mind alert and for use in connection with my hobby, family history, and for personal correspondence and records. This was four years ago and I have never regretted it, but I do agree with his comments about the lack of articles in the magazine dealing with the serious side of computing and I welcome your reply that there are plans to remedy this and I hope that these will come to fruition quickly.

However I do wonder what Mr Pewty means, and you understand, by the expression "the serious side of computing". As I see it there are two meanings to this; serious computing (programming etc) and serious use and I would like to put in a plea for more attention to be given to those of us who are primarily concerned with the latter – the drivers as distinct from the mechanics.

There must be many, like myself, who are purely and simply end-users with little or no interest in the mechanics of either the equipment or the software but who would welcome advice on how to make the best use of both. It seems to me that we are frequently overlooked by the magazines, ignored by the manual writers, who either patronise us or credit us with knowledge we neither have nor want, and treated with disdain by the manufacturers and producers who, once we have succumbed to the blandishments of their advertisements have no further interest in us. I could quote many instances were it not for lack of time and space.

I am enjoying Gordon Bates articles on communications, which have been informative and not overly technical and I read David Dorns Applications Advice with interest, but feel he could be more concise and cover more points in each article, I am sure he must get sufficient enquiries to enable him to do this. But apart from these two and the occasional review such as that by John Taylor on General Ledger the magazine holds little of interest for me: and as for posters and free tapes, please NO!! The money can be put to much better use.

What I would like to see is a section built around the theme of what keys to punch or what add-ons to attach to achieve such and such a result with such and such a programme. Also a section for the exchange of tips, grumbles, comments, problems and solutions between end-users with the occasional professional comment added by the magazine. Rather like the old Amster's Cage but confined essentially to practical and not technical points.

*D.J. Elson, Temeside, Ludlow, Salop.*

**ACU:** We have tried in recent months to increase slightly the coverage given to 'serious' computing issues with Gordon Bates's comms column, the odd serious large listing, more variety

in the 10 Liners and regular round ups of software for DTP, education, word processing and suchlike. Plans are in the pipeline for round-ups of spreadsheets, databases, comms equipment, mouses, more joysticks and books. Further hardware projects and a series of articles on making music on the Amstrad CPC are also under consideration. We agree with Mr Elson's confusion over what 'serious' computing actually means and we would like to base our interpretation on what you lot think, so get writing and tell us what you want to see in your magazine.

# Save it

I bet you think once you have :ERAsed a file off a disc it's gone, well I have the answer, you can even store everything on one disc! It can be quite tricky but you don't care – do you now? Anyway SAVE the file on the disc, you know the thing, and erase it in the usual way. Type POKE &a701,229 and then CAT then you will see the erased files on the screen. On some computers you will not be able to load them so just type :REN,"0:FILENAME","SAME FILENAME" (this sets it to user 0) reset the computer and type cat.

You can also change the ,229 to any number (user number) as long as it's higher than 298. Note this works on my 6128 and it may not work on others.

*Matthew Furber, Southampton, Hants.*

# Loaded

I have found an expeditious way to load disc software on a 6128. This method I find quicker than typing the normal RUN" filename and it is also less stressful on the old finger.

Simply punch in at the keyboard the name of the file you wish to install. Following this, keep one finger on the CONTROL key and press the left cursor key then still depressing the control, press enter (not RETURN). Your file will now run normally.

Here is another little tip I have for Multiface 2+ owners. Do you find it annoying to constantly unplug Multiface, when loading a game which detects the 'Black Box'? I have the answer to your problem.

1. Turn on the computer and press the stop button on Multiface (the red one).
2. When on the Multiface menu press C which activates 'clear'.
3. Press R to return to Basic.
4. Run your game in the normal way.

If you have done this properly your game instead of crashing or stopping will run as if Multiface does not exist.

PS Bring back the adventure column.

PPS Join the Amstrad User Club for it is outrageously good value for money. It certainly is 'power behind your Amstrad'.

*Henry Williams, Cheltenham, Gloucestershire.*

# Do you copy?

Please can any reader out there in the compu-world help me? I have all the issues of ACU dating back to February 1989 but not the January one.

The back issues department can't help me as they've now run out.

If anyone has a spare issue, or one they don't need, that's in fairly good nick, *please* can you get in touch with me.

This is a cry of sheer desperation!

*Adrian Child, Bexhill, East Sussex.*

# Drive on

I recently purchased a 'Maplin' Amstrad expansion system for my CPC 464 and have considered putting a disc drive on. But I have the problem of choosing one. The expansion system has its own duplicate expansion part on the back I could use. Please could you name a few disc drives and what they could do?

*Peter Wheeler, Herefordshire.*

**ACU:** You can find what you want without looking any further than the magazine you are reading. Our Direct Lines page contains details of DDI which should be just what you are after.

# Comm again

This letter is about your comms column in the November 1989 issue of ACU. You mention the CPM public domain program MEX and reckon it's pretty good. However, there is in my opinion a better program available called ZMP. It's available for the CPC and PCW (CPM only I'm afraid).

ZMP is a public domain comms package that has full terminal facilities, works with manual or automatic (Haynes AT commands) modems, and supports X-Moderm, X-Moderm IK, Y-Moderm and Z-Moderm transfer protocols. All baud rates are supported except 1200/75. 1200/75 doesn't get much use over here except for Viatel (Telecom's equivalent to your Prestel System). Most bulletin boards here have 300-2400 baud, some even have 9600.

I don't know whether ZMP has reached the UK yet, the latest version (1.5) was released here in March 1989. It was written in Western Australia so support for us is only a phone call away.

If you, or anyone else, would like a copy of ZMP, drop me a line to PO Box 502, Stirling, South Australia, 5152 Australia enclosing a disc (either 3" or 5¼" – specify what format you require ie 178k Data Format, 356k 40 track DS, 716k 80 track DS) and I'll send it back by return mail. I can't afford to ring the UK and upload it myself (phone charges are a bit steep over here – it costs A$1.20 a minute to ring the UK and that's off-peak).

Cheers from another comms fanatic.

*Nick Gibbs, Stirling, South Australia.*

**ACU:** Thanks Nick for your nicely objective opinion.

# Poor score

I am writing a complaint about the new scoring methods of the Gameplan. Why has the overall rating been replaced by ghastly pictures which are supposed to represent the quality of the game. This would be perfectly feasible if you printed a list of what indicates a good game and what indicates a bad game in some sort of order.

*Robert Iddon, Croston, Lancashire.*

**ACU:** We stopped the 'overall' mark because we felt it was a little meaningless and that the reviewer's impression of the game was clear from the other three marks. The new verdict box is our attempt at introducing an element of humour to the proceedings which we are confident will not be above the heads of very many of our readers.

**Send your opinions to:**
**Ziggy**
**ACU, Greencoat House,**
**Francis St., London SW1.**

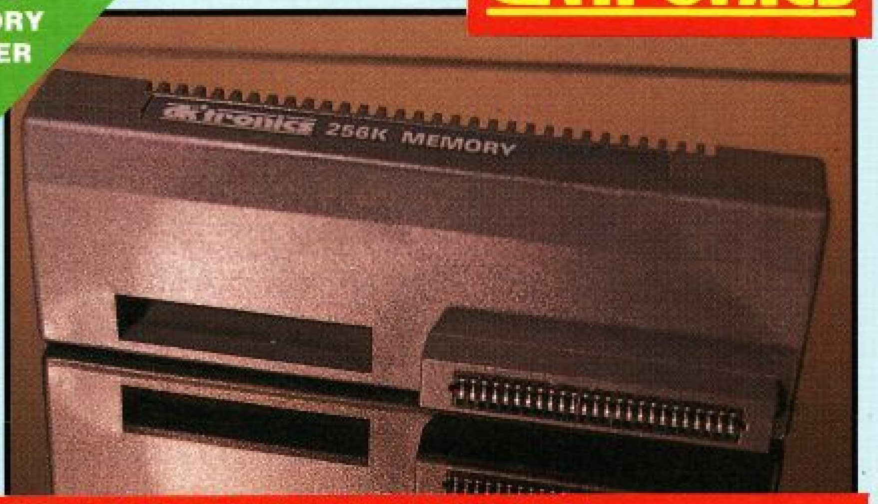
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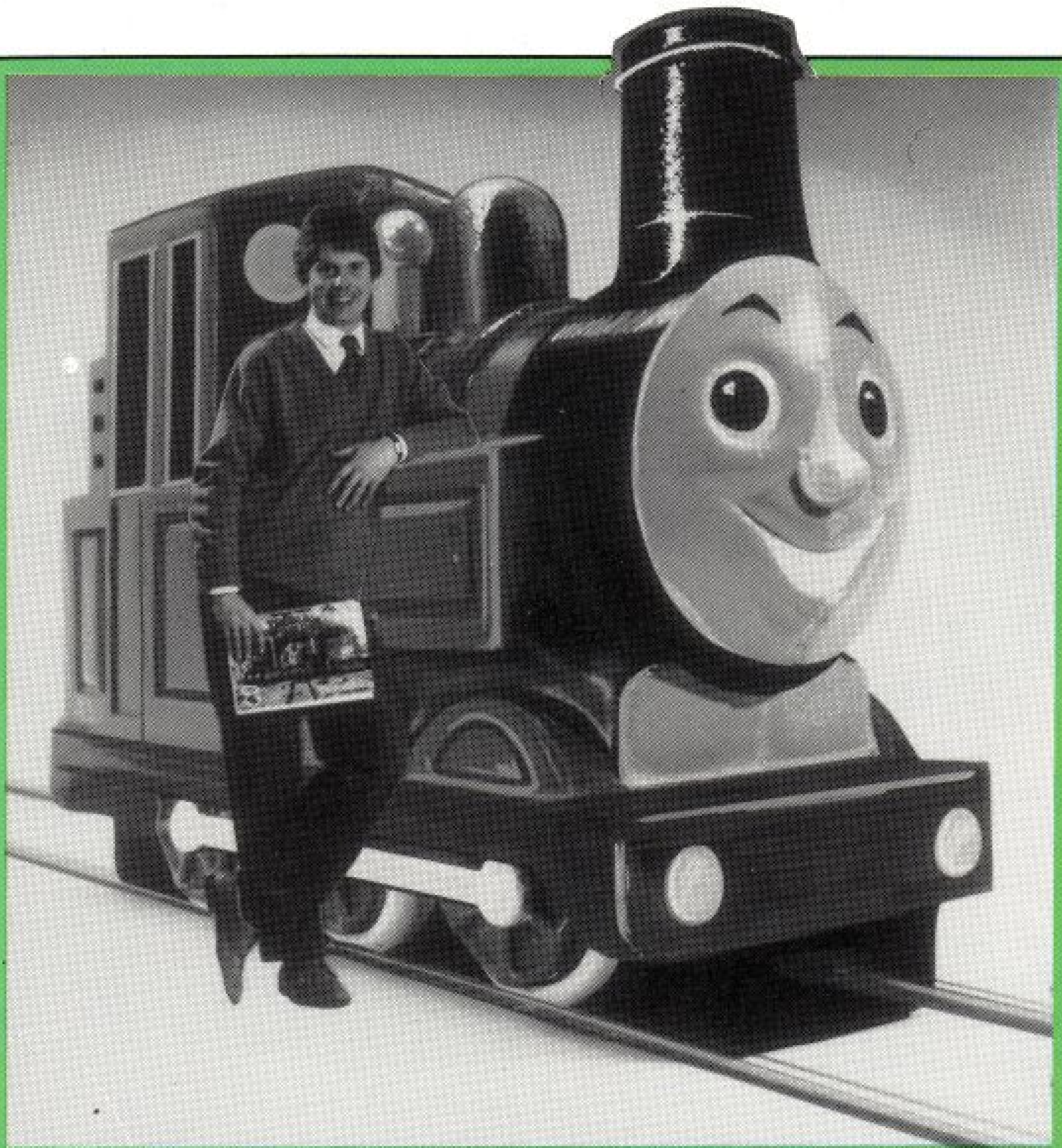
I do, and if you do too, then you could do worse than to listen to the advice of seventeen year old Gareth Perkins of Totnes in Devon.

Gareth, managing director of Galeper Soft, started the company when he was fifteen, working on a shoe-string budget from his parents' bungalow. Since then, Galeper Soft has expanded rapidly, selling software to all corners of the globe.

Based on his own experience, Gareth's latest venture is a booklet entitled *Your Own Software House – Guaranteed*, a step-by-step guide on how to start up and run your own business from home, without even having programming abilities. He guarantees that his new system is totally foolproof and, to back this up, Gareth is offering a staggering £10,000 to anyone who fails to start their own software or hardware house after following his instructions.

For the relatively small investment of £10, Gareth claims this advice will allow you to build up a company to challenge the software giants within just two months of starting from home.

Your Own Software House – Guaranteed is available from Galeper Soft, 36 Weston Lane, Bridgetown, Totnes, South Devon, TQ0 5UN. Telephone: 0803 864784. Cost: £10.00 plus 50p for postage and packing.



# Tanked up

Alternative Software has proudly announced *Thomas the Tank Engine*, one of the largest character licenses in the UK.

To celebrate the signing, Thomas will be appearing on your screens along with all his friends in the Thomas the Tank Engine game, selling at just £2.99.

The game's colourful graphics will be complemented by the world famous Thomas the Tank Engine theme tune and there will also be easy and hard versions for the young and not so young.

# Comic edge

Following hard on the success of *Snoopy* and *Garfield*, The Edge has added to its line of classic cartoon licenses with the signing of the Great Gaul himself, Asterix.

With the forthcoming launches of *Dariuspy001* and the long awaited *Punisher*, Asterix looks to be in very good company and we can be sure to see some great screen action from the fighting Frank and his friends before too long.




# World Cup action

Just in case any of you out there had forgotten, 1990 is World Cup year, and to coincide with this sporting event, Virgin Games is releasing its own version of the tournament.

*World Cup Soccer '90* has been converted from the arcade game by Andromeda Software in Hungary and features teams from the qualifying rounds of the cup.

Designed for one or two players, the game includes close up views of goals and the replacement of injured players with substitutes. World Cup Soccer '90 should be on the streets in mid-May to give you a chance to warm up before the real thing. Let's hope it is better than some recent football efforts.

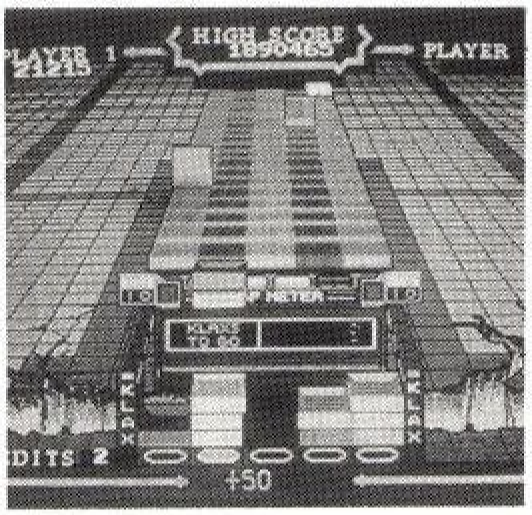
# Klax attack

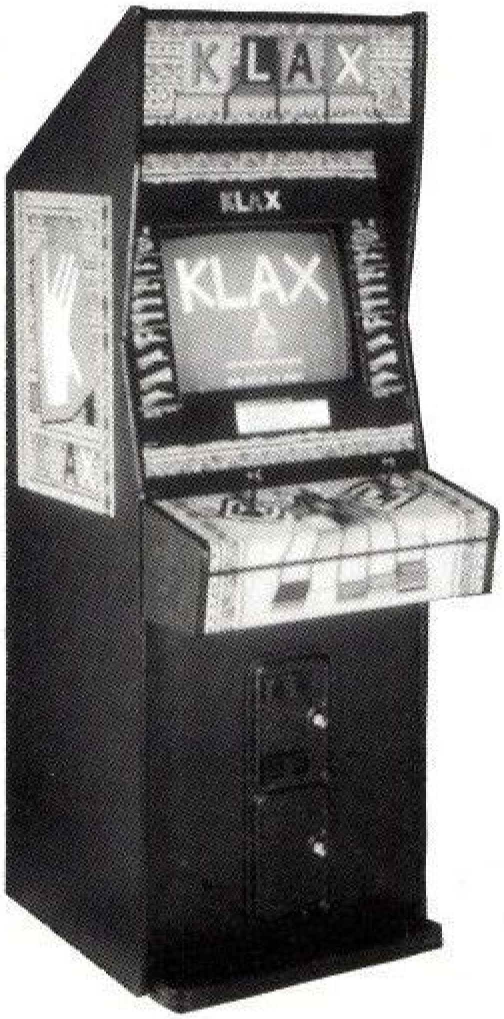
Software and coin-op development has been running apace in a unique collaboration between Domark and Atari which will allow the simultaneous release of Atari's *Klax* on coin-op and computer.

Based on a very simple concept, the player catches coloured tiles as they roll down the screen and flips them into the bins below. The aim is to arrange the tiles in lines of three of the same colour – horizontally, vertically or diagonally. Once this colour line-up, or Klax, is achieved, the tiles disappear, points are scored and the bins are ready to take more tiles.

Domark's Mark Strachan said of the release: "This is the first time that a coin-op manufacturer has worked so closely with a software house and portrays the strong relationship between the two companies."

Klax is due for release on the CPC format at the beginning of April, on both disc and cassette, for £14.99 and £9.99 respectively.

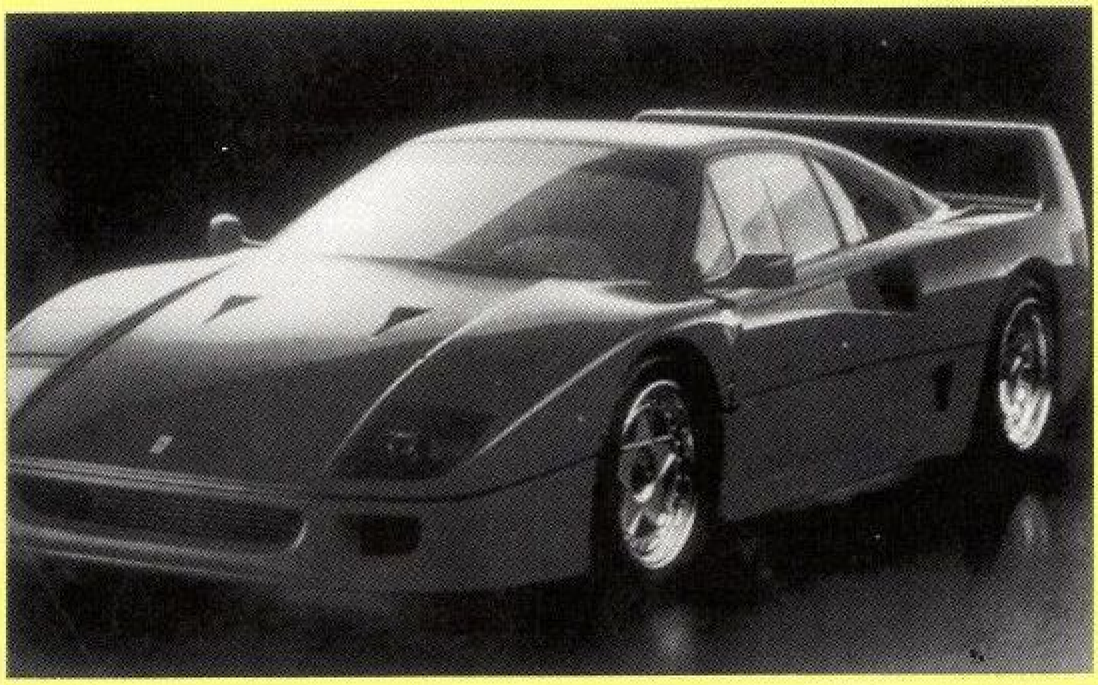


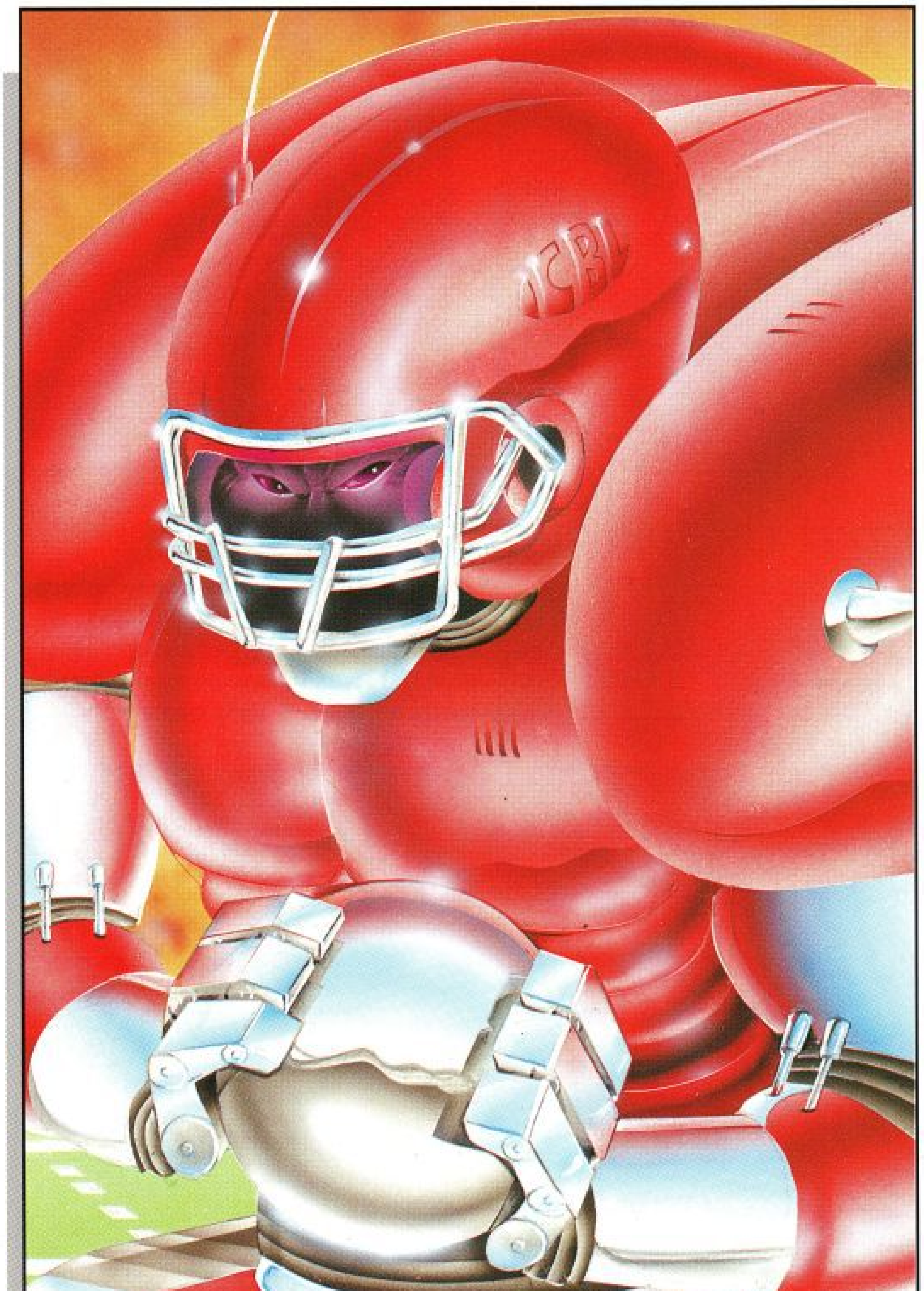

# Hard drivers

Super remote control Ferrari's are racing their way to James Hall of Bournemouth, Terry Buckett of Kettering and Anthony Jordan of Worcester Park in Surrey, the three lucky winners of our February *Hard Drivin'* competition.

Once again we were overwhelmed by the number of entries but, alas, we could pick only three. So get your driving gloves on and put those speed machines through their paces boys.

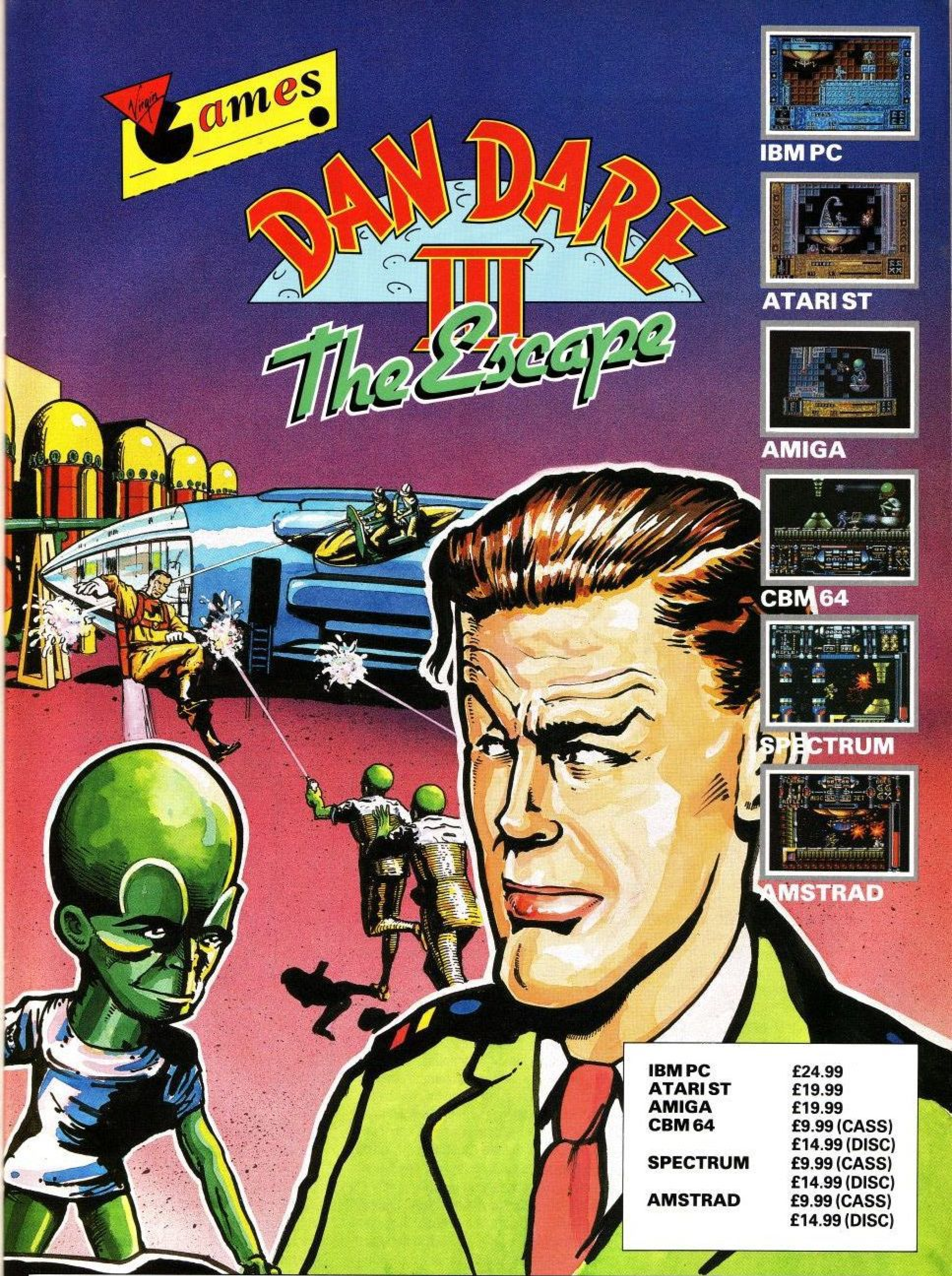






It's time to touchdown and win yourself one of three genuine American Football shirts which we have to give away, courtesy of Domark as first prizes in our Cyberball competition. The winners can choose the shirt of the NFL team of their choice, so preference and size should be stated on each entry. Twenty runners-up can strike fear into the hearts of local greenhouse owners with an inflatable American football. Contestants must send in their drawing of what an American footballer will look like in the year 2022 to us by May 31. The editor's decision is final.

**The editor's decision is final.**
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# COMBAT ZONE

## John Cook suns himself in the arcades of Blackpool and wishes you were there.





Well, here in the Combat Zone, it's nothing new to be blown away – either by hordes of Alien Beings or simply the supreme wonderfulness of a particular game. This month however, your roving team of intrepid funsters made their way up to Blackpool to view everything new and fab at the Amusement Trades Show – and almost got blown away into the sea by wild gusts of wind zooming down the deserted promenades. Who said we journos don't make sacrifices?

So with life preservers firmly strapped around our manly torsos, we strutted (well, it is rather difficult to do any but in a life preserver) into the Winter Gardens prepared to do battle for the Queen, Saint George and ACU.

Just when you thought it was safe to take off the flack jacket, kaboom, and suddenly another load of mow-em-down arcade titles appear. It was obvious that all the men in suits were sure that *Line of Fire* (from Sega) and *Beast Busters* (from SNK) were both going to go down a treat with the punters.




**Marvel land.**

Line of Fire is, of course, the very first mow-em-down to come out of the Sega camp and utilizes its fab sprite expansion technology. It really is very pretty indeed – but is banal as the rest of this mob, with all the gameplay of a ten day old dead haddock.

You have an 'out of the eyes' perspective view with the scenery (and the legions of kamakazi enemy troops) constantly advancing towards you. And you, or you plus a friend, simply press the fire button and give em' hell. Extra power-ups appear on the screen which when shot can give you extra grenades (a kind of limited smart bomb), or some extra life force, which is lost when you get hit.

Unlimited ammo and easy gameplay will attract the more impressionable players – as will the racy promo blurb handed out at the show, ("incorporates a vibration mechanism that enables you to actually feel the thrilling realism of firing a weapon"). If everyone wants the thrill of firing weapons, why don't we just bring back National Service?

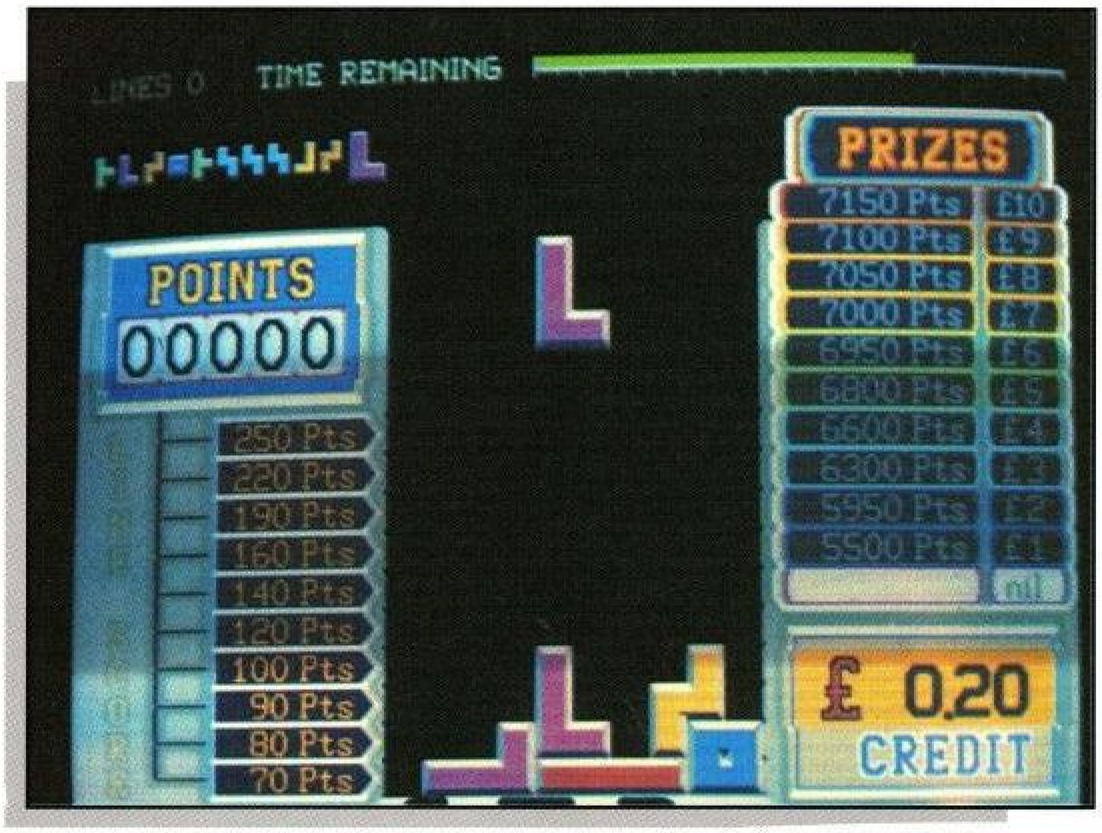
At least Beast Busters is a mow-em-

down that can claim to be slightly divorced from reality – with the plot being a town taken over by Zombies and other assorted squidgy stuff.

Not for the faint of heart, this 1 – 3 player game follows the same basic design of scrolling screens, with things rushing at you that you have to shoot before they do serious damage. Problem is, being Zombies (mostly) when you get em' down, do they stay down? Do they hell! It's up and at you again in a most disturbing fashion. Yuk!

I've played the game through to the very end, and I can tell you for nothing that it's got more cliffhanger finishes than *Friday 13th Part 3*. Just when you think you've shot the last end-of-level beastie . . . something crawls out of the slime that starts giving you gip.

A better game then than Line of Fire, although graphically inferior. Still, wouldn't you rather be playing *Tetris*?




**The rapture of Tetris returns.**



**Beast busters.**

Oh bliss, oh rapture. Oh rapture, oh bliss. What are we talking about? We are talking about the thing that you have been waiting for all your life. We've had SWP (Skill With Prizes) machines that pay out when you answer a lot of questions correctly. Now a company has brought out a SWP that pays you money . . . if you are good at Tetris. Can you believe that?

The game is played as normal – like the home computer version, not the Atari Games coin-op – but for every line that you make across the screen you get points. The higher the line was up the screen when it was made, the more points you get, and you play against a strict time limit. You also get to see a line up of the next 11 shapes.

Score over a certain amount (decided by the machine – and altered upwards if you start making money!) and it pays out, up to £10. The bad news – it costs 50p per go. Still – one reason to get out the CPC version of the game and start practicing . . . maybe you could turn pro!

Talking of puzzle games, probably the best game of the show was *Klax* from Atari Games. This is one that will send you bonkers as your brain tries to get around the rules – but once you have the hang of it and it finally clicks, you earn considerable cool points for being better than everyone else!

Different coloured tiles progress down a wide conveyer belt that comes out of the screen. You control a bat that moves along the bottom of the belt, covering one section at a time.

You have to catch each tile before it falls off the end of the belt, because if you lose three off the end, you also lose a life. Thing is, your bat can only hold five tiles in total.

So, you have to flip tiles off the bat (by pressing the fire button) into a 5x5 matrix below. Make three of the same colour in a row – vertical, horizontal or diagonal – you make a "Klax" and they disappear, leaving you the room to flip more on. It's ingenious.

With each wave you have a different task. Make so many horizontals, diagonals or just hold out for a number of tiles. Great game, which Domark are putting on all home formats. Give it a go – it makes a welcome change from blasting and is unlikely to disappoint once you have the hang of it.

Two new driving games also showed up – *Badlands*, again from Atari Games, and *Rough Racer* from Sega. Both based on the *Super Sprint* concept, will talk about them in detail next week. But the best new board of the show must have been the cutsie *Marvel Land* from Namco.

This is in the *Super Mario* mould, being a jumpy jumpy where you get power-ups and destroy enemies by doing strange things – like jumping on them and kicking fire hydrants.

Fun, pastel graphics with the kind of gameplay where you have to try everything . . . it's fair to say that there is a steep leaning curve to get up, but somehow it hooks you – and you find yourself playing again and again. Except to see than on home format sometime in the near future.

Finally – want to get really spooked playing a game! *Aliens* from Konami (based on the movie) isn't finished yet, but just the thought of being attacked by all those alien things – blagh! Even playing a pre-production version, I'd say this is one of those games guaranteed to give you goose pimples – or should that be tummy ache? Don't go overeating, will you! See you next month!

**Aliens.**



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| **Fun School 1 *10 programs per disc*** | |
| For 2-5 years | 7.95 |
| For 5-8 years | 7.95 |
| For 8-12 years | 7.95 |
| **Fun School 2 *8 programs per disc*** | |
| For 2-6 years | 9.95 |
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| For 8-12 years | 9.95 |
| **French Mistress *(12-adult)*** | **15.95** |
| German Master | 15.95 |
| Spanish Tutor | 15.95 |
| Italian Tutor | 15.95 |

## MINI OFFICE 2

Database Software's great value-for-money package continues to be one of our best sellers, and is the ideal introduction to serious software. Contains Word Processor, Database, Spreadsheet, Graphs and Communication programs.

**DISC RRP.................... £19.95**
**OUR PRICE.................. £13.95**
**CASSETTE................... £14.95**
**OUR PRICE.................. £ 9.95**

**WHILE STOCKS LAST**

## DISC SERIOUS

see also CPM based and Mini Office 3 boxes

| | |
|---|---|
| **Protext** | **17.95** |
| Prospell | 16.95 |
| Promerge | 16.95 |
| Maxam (Assembler) | 18.95 |
| **Tasword 6128** | **23.95** |
| Tasword 464-D | 23.95 |
| Taspell | 14.95 |
| Tasprint | 11.95 |
| Tascopy | 11.95 |
| Tasdiary | 11.95 |
| Tas-sign (6128 only) | 23.95 |
| Tas-sign extra fonts | 10.95 |
| **Qualitas Plus v2** | **14.95** |
| Qualitas Font Library | 11.95 |
| Qualitas CPM+ Utilities | 8.95 |
| Masterfile 3 | 29.95 |
| Mastercalc 128 | 25.95 |
| Matrix Spreadsheet Plus | 29.95 |
| Stockmarket (Share Analysis) | 25.95 |
| Advanced OCP Art Studio | 19.95 |
| Stop Press Desktop Publishing | 34.95 |
| Extra Extra (for Stop Press) | 19.95 |
| X-Press 1.3 (for Stop Press) | 18.95 |

## ROM BASED

NB: A ROM board, such as ROMBO, is required to use any of these ROMs

| | |
|---|---|
| **Rombo** | |
| **(ordered on it's own)** | **31.95** |
| Rombo | |
| (if purchased with ROM) | 28.95 |
| Protext | 27.95 |
| Prospell | 22.95 |
| NB: Dictionary is supplied on disc | |
| Promerge Plus | 22.95 |
| Maxam | 27.95 |
| Maxam 1.5 | 20.95 |
| NB: Although Maxam 1.5 has extra features, you must have Protext on ROM to use it | |
| Utopia | 20.95 |
| BCPL | 21.95 |

## MINI OFFICE 3

**Okay, so it doesn't really exist, but what do you do when you've outgrown Mini Office 2? We give our recommendations for the best packages most CPC owners to replace each module. Please note ROM versions require a suitable ROM board, such as the ROMBO.**

### PROTEXT – Word Processing
### Disc £17.95, ROM £27.95

*The WP program for people who want to process words quickly and efficiently. Allows several different ruler lines per document, (stored with the file), normal tabs, and decimal tabs for columns of numbers. Commands have been kept as logical as possible, for example, to format a paragraph you press CTRL-F, to switch justification CTRL-J. Our favourite on any machine. Disc version allows files up to 26k (about eight pages), ROM version allows 40k.*

### PROMERGE – Mail Merge
### Disc £16.95, ROM £22.95

*This is the program which allows you to take a file of data (created from Masterfile, written directly in Protext, or entered at the keyboard during print run) and 'fill in the blanks' on a standard letter wirtten within Protext, automatically re-formatting as it goes. It actually goes beyond that. The ROM version on a 6128 also allows two files to be stored in memory so you can switch between them and copy blocks of text over.*

### MASTERFILE 3 – Database
### Disc only £29.95

*For 128k machines only as it uses second 64k of memory for data storage, so is very quick at searching. Unlike most of it's competitors, you never need specify a field length, and it only stores the characters you've used. This means about 1,000 names and addresses can be stored in one file. Flexible layout options give many ways of displaying and printing the information stored. Advanced users will find it's parent/child data linking saves even more space when the same data is used in several records.*

### MATRIX – Spreadsheet
### Disc £29.95

*One of the nicest programs to use we've come across on any computer, Matrix has excellent editing features and the ability to sort whole blocks of the spreadsheet in to order either numerically or alphabetically on any row or column you specify. Output to printer, or to disc to enable you to load into your wp program for final editing and amendment, or even to include blocks of figures within reports. Also has graphics features for pie charts, bar charts and line graphs. Features a pop-up calculator and a notepad, which allows brief documents to be created without leaving the program.*

**These programs give you everything Mini Office 2 can offer and more. But there's no reason to stop there. The following programs offer whole new areas MO2 doesn't even think about. See also the Printing box elsewhere in this advert.**

### PROSPELL – Spell-Checking
### Disc £16.95, ROM £22.95
### Dictionary supplied on disc

*Each word in your document is compared with a 30,000 word dictionary, and if it's not in there it will highlight it so you may correct it, ignore it, or add it to the dictionary. New words can be added and whole new dictionaries created. Find words and anagram features will be a boon to cross-word players!*

### UTOPIA – Utilities
### ROM only £20.95

*This 16k ROM is packed with useful routines which mean you can format, copy or verify discs, copy, rename, or erase files, save blocks of memory in Hex or as ASACII, display files on screen, find and replace variables in files, echo screen output to printer and much more all without leaving Basic, Protext or Masterfile. Never again need you lose valuable data or documents because you ran out of disc space before saving!*

*Overseas Orders Welcome – Please write for details*

WE ARE NOW IN OUR FIFTH YEAR OF SPECIALISING IN AMSTRAD MAIL ORDER, OUR POLICY IS TO PROVIDE THE WIDEST RANGE AT DISCOUNT PRICES WITH A FAST TURN AROUND TIME – TRY OUR SERVICES WITH CONFIDENCE

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**40a Queen Street, Hitchin, Herts SG4 9TS**

**PROPRIETOR: M. J. COOPER**

# SOFTWARE

# C Supplies

## PRINTED OUTPUT

### IMPROVED TEXT QUALITAS PLUS V.2

*One of the most useful utilities for 9 pin printer owners, this program prints almost 24 pin quality text in a choice of fonts from any Epson compatible capable of quad density graphics including the Amstrad DMP range. Works from within Mini Office 2, Masterfile 3, Protex (with or without it's add-ons), Tasword or even from Basic. Matrix users will need to print to file then load into one of the WP programs. Qualitas Plus version 2 is supplied with 5 business type fonts for use with or without the KDS 8-bit printer port. The Qualitas Font Library gives 8-bit port owners a further 30 fonts to choose from, comprising business, decorative and italics as well as some foreign and mathematical symobls. The CPM+ Utilities Disc allows Qualitas to be used with Protext CPM and other CPM+ programs.*

| | |
|---|---|
| Qualitas Plus v2 | 14.95 |
| Qualitas Font Library | 11.95 |
| KDS 8-Bit Printer Port | 18.95 |
| CPM+ Utilities Disc | 8.95 |

### QUALIPACK EXTRA

comprising Qualitas Plus v2
KDS 8-bit Printer Port
and Qualitas Font Library
£41.50

### PRINT COLOUR GRAPHICS COLOURDUMP 2

*Many people have been trying to print colour graphics on a Star LC-10 Colour Printer for some time, with little success (are you reading, David Dorn?). Regular readers have by now found Colourdump 2, exclusively available from MJC Supplies. This stand-alone utility program takes a standard 17k screen file created with Advanced OCP Art Studio, AMX Art program, or from within Basic and asks you which of the 26 palette colours you wish to assign to each of the 16 inks available in mode 0, or 4 in mode 1, and then prints out an up to 16 colour 135 x 95 mm double density picture. We can now also supply 4 colour heat transfer ribbons which allow you to print your colour image onto plain paper and then iron onto cloth for customised t-shirts! Although best results are obtained with the Star Colour printer, ColourDump 2 will work on any 9 pin dot matrix printer, but you will need to buy several different coloured ribbons.*

| | |
|---|---|
| **ColourDump 2** | **12.95** |
| Advanced OCP Art Studio | 19.95 |
| **Star LC10 Colour** | **229.95** |
| Star 4 colour ribbon | 5.95 |
| or two for | 11.00 |
| Heat transfer ribbon | 19.95 |

**NB: Each heat transfer ribbon should produce about 15 ColourDump images and are for Star LC10 Colour only.**

## PRINTERS

All printers listed are Epson compatible and suitable for use with any Amstrad CPC (and most other) computers, although we do ask you to call before ordering Colour or 24-pin printers for specific information. All feature friction feed for single sheet and tractor feed for continuous paper. All these prices include VAT, ribbon, and free connecting cable. Despatch is by Royal Mail Insured Parcel (at no charge) for which you should allow 7 to 10 days. A 2-day courier services is available. All printers carry a 12 month 'return to MJC' guarantee, an optional 12 month 'call out' contract is available.

**Add £5 for courier despatch, and £5 for 'call out' warranty.**

### CITIZEN 120-D

*The cheapest printer in our range offers all the features of the Amstrad CMP2160 but is better built and £20 cheaper. Offers a good range of character widths and effects in draft mode. Near Letter Quality mode available but not in all sizes and effects.*

£139.95

### STAR LC-10 Mark 1

*As well built and reliable as the Panasonic, the Star LC-10 range offer features not found on many more expensive machines. NLQ is offered in all sizes and effects, including double height in not one, but four different fonts. All character widths and fonts are selectable from software or from the printers control panel. Paper Park function allows single sheets to be used without disconnecting continuous paper. Even includes a three pin plug!*

£179.95

### STAR LC-10 Mark 2

*Offers all the features of the Mark 1, but is 25% faster, a considerable improvement. If your budget will reach it, it is highly recommended!*

£199.95

### PANASONIC KXP-1081

*Exactly the same price as the DMP 2160, but built to last and offering not only a better NLQ print quality but all sizes and effects are available. NLQ and Compressed mode selectable from software or from printer control switch. The starting point for all but the most budget conscious!*

£159.95

### STAR LC-10 COLOUR

*As a mono printer the LC-10 Colour is identical to the Mark 1, but features a four colour ribbon which allows seven basic text colours to be printed out from your word processing software. With Colourdump 2 all 26 palette colours from your Amstrad can be duplicated for graphics printing. Please call for advise before ordering.*

£229.95

### 24-PIN PRINTERS

*We stock three 24 pin printers, the Star LC24-10 at £259.95, the Panasonic KXP-1124 at £299.95 and the Citizen Swift 24 at £359.95. Please call for advice and specifications before ordering.*

## CPM BASED

### MJC SPECIAL PROTEXT CPM
### OUR PRICE JUST £39.95

| | |
|---|---|
| At Last Plus | 29.95 |
| SuperCalc 2 | 55.95 |
| Arnor C Complier | 39.95 |
| Maxam 2 | 39.95 |
| Nevada Cobol | 39.95 |
| Hisoft C | 39.95 |
| Devpac 80 version 2 | 39.95 |
| Pascal 80 | 39.95 |
| Iankey Crash Course Typing | 19.95 |
| Iankey Two Finger Typing | 19.95 |
| Knife Plus | 18.95 |
| Nevada Fortran | 39.95 |

## RIBBONS

| PRINTER | QUANTITY 1 | 2 | 5 |
|---|---|---|---|
| DMP 2000/2160 | 3.50 | 6.00 | 14.00 |
| Panasonic 1081 | 3.95 | 7.00 | 15.00 |
| Citizen 120-D | 3.95 | 7.00 | 15.00 |
| Star LC-10 Black | 3.95 | 7.00 | 15.00 |
| Star LC-10 Colour | 5.95 | 11.00 | |
| **Heat Transfer Ribbons** | | | |
| Citizen 120-D | 12.95 | 25.00 | |
| Star LC-10 Mono | 13.95 | 27.00 | |
| Star LC-10 Colour | 19.95 | 37.50 | |

## CORNIX SOFTWARE

### SIMPLE ACCOUNTS

Designed to be easy to use for those with little or no knowledge of computers or accounts. VAT returns, sales and purchases under up to 20 user defined classifications.

**CASSETTE: £34.95**
**DISC: £39.95**

### JOB ESTIMATOR

Aimed at the small contractor who needs to provide estimates quickly and neatly. Ideal for small builders, brick layers, plasterers, etc.

**DISC ONLY: £39.95**

### PRODUCT COSTING

Similar to Job Estimator but aimed at manufacturers or those producing a product for sale.

**DISC ONLY: £39.95**

### CARD INDEX

An easy to use card index type data retrieval program. Ideal for basic database requirements.

**CASSETTE: £19.95**
**DISC: £24.95**

Full specifications of all Cornix products available free of charge upon request.

## NEW PRODUCTS TO MJC

### X-PRESS 1.3

*Excellent utility for Stop Press owners. Print pages four times faster, compact pages on disc, up to 8-page background printing, 5 print modes, view pages from disc.*

£18.95

### SPRITES ALIVE!

*Adds 7p commands designed to help you write games from Basic. Features up to 64 sprites, sprite design, movement and collision detection. Works in Modes 0 or 1.*

£18.95

## BLANK DISCS

**Maxell CF2 Discs**
5 for £13.00
10 for £23.95

**Amsfot CF2 Discs**
5 for £16.00
10 for £29.95

## ACCESSORIES

| | |
|---|---|
| DKT 64K memory expansion | 45.95 |
| Multiface 2+ | 42.95 |
| Amstrad RS232 interface | 55.95 |
| KDS 8 bit printer port | 18.95 |
| CPC printer lead 1 metre | 8.95 |
| CPC printer lead 1.5 metre | 9.95 |
| CPC printer lead 2 metre | 10.95 |
| 464 Keyboard/Monitor ext leads | 6.95 |
| 6128 Keyboard/Monitor ext leads | 7.95 |
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| 6128 Cassette lead | 4.95 |
| 464 Dust cover (state col/mono) | 7.95 |
| 6128 Dust cover (state col/mono) | 7.95 |
| CPC mono screen filter | 12.95 |
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| 3" Disc drive head cleaner | 6.95 |
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| Quickshot 2 Turbo joystick | 9.95 |
| Cheetah 125+ joystick | 7.95 |
| Competition Pro 5000 joystick | 13.95 |
| Cruiser joystick | 9.95 |

**NB: We regret that due to supply problems Database Software are unable to supply any AMX Mice at present. This situation is not expected to improve until June.**

## MJC SUPPLIES (DPS)

**ORDER BY ACCESS OR VISA ON (0462) 432897, 420847 OR 421415**

# Playing for keeps

Richard Paul Jones is a rich man, and he's only 24. His company, Players, has made the budget game an art form. Chris Knight marches to its HQ in Aldermaston to investigate.




**Richard Paul Jones and Martin Currey look to a rosy future.**

There must be hundreds, no, probably thousands of teenagers in Britain who, every night as they crouch down over their RAM-charged, super-tooled machines, dream of using their programming skills to set up a software empire. For all of you out there, you could do far worse than take a leaf out of Richard Paul Jones's Filofax.

Llamasoft, Richard's first venture into the software world was set up in 1982, when he had reached the ripe old age of sixteen. He and partner Geoff Minter were responsible for some pretty psychedelic stuff, although as Richard himself puts it: "Llamasoft was strictly a 64 house."

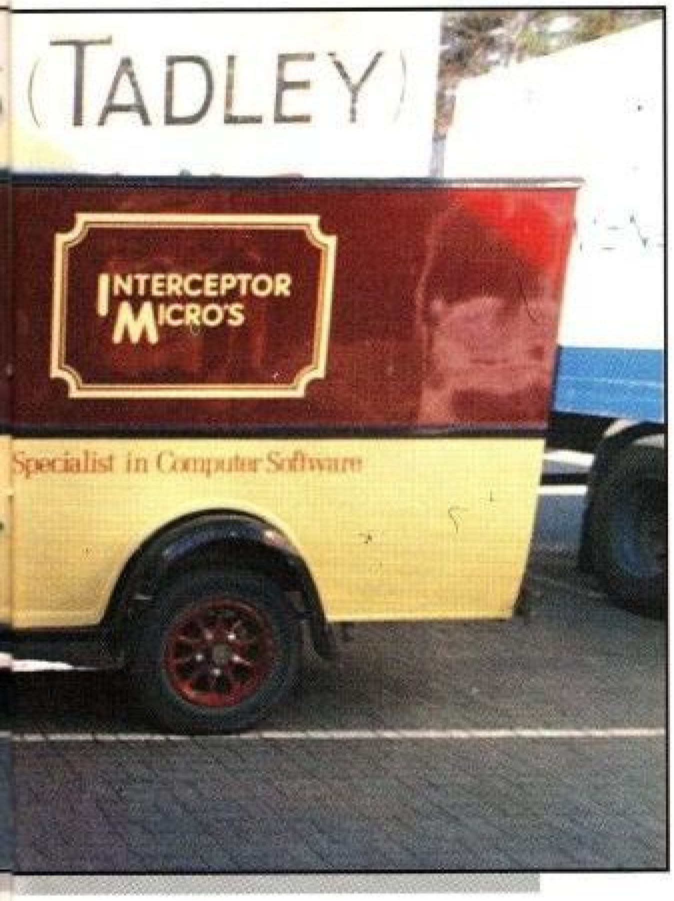
Interceptor, on the other hand, was designed with a much larger variety of computers in mind, and after its launch at the end of 1982, the success of the company's first release set Richard off on the right track.

*Penny Slot* was bought by the company for just £25 and the game itself had taken a mere three days to write, but with an ever increasing market of eager gamesters and the right packaging, Penny Slot sold thousands of copies. With careful consolidation after this firm beginning, Interceptor moved from success to success during 1983 and 1984, dominating the top ten game charts from week to week. But then came the Americans.




**Goodies galore from the Players repertoire.**

"We were hit very badly by the American assault on the software market," claims Richard. "The first game that came over was *Beach Head*. We hadn't seen anything like it over here, and it was followed up by one game after another from the likes of US Gold and Ocean. What really helped to bring us back were computers like the Amstrad, which ac-




counted for a large number of sales of games like *Jewels of Babylon*."

Another important factor in Interceptor's revival, and one the Americans had not counted on, was the introduction of the budget game. "Everyone laughed when Mastertronic came out with their budget label in 1986, thinking it would never catch on," says Richard, "and then they noticed the money piling in."

The Players label was launched by the Interceptor group shortly afterwards, introducing sixteen fresh titles in trendy packaging which sold like proverbial hot cakes. The subsequent launch of the premium label, Pandora, brought in even more revenue with the release of epics like *Eagles Nest* and *Galdregon's Domain*. But despite the dramatic comeback, Richard was certainly not content to sit back and relax.

**Belinda takes care of the mail.**



It is not always easy to break into the American market, but Interceptor has managed to do so on a fairly regular basis. "The problem with the US is that they only take out contracts on a one disc basis," claims Richard. "It's difficult to work with but games like Eagles Nest and Galdregon's Domain have both been great successes over there under different licences. It has taken a lot of hard work but we have finally caught up with them."

But catching up is not always enough and looking at the developments at Interceptor over the years, that certainly wasn't the aim. If the company's only contribution to the computer business was the production of games, they would probably be doing very nicely indeed. However, with a lot of enterprise and initiative, the company instead has developed all the trappings of a small empire.

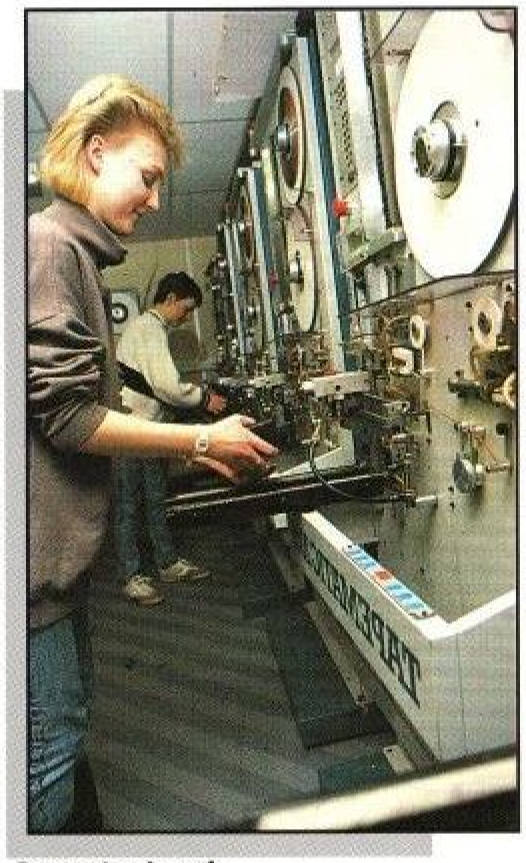


**Printing for profit.**

Tucked away inside Mercury House, the home of Interceptor, are an art house, tape duplication and production equipment of astounding proportions, a printing shop, cassette case manufacturing room . . . the list is endless.

Richard Paul Jones explains himself by saying "Our major problem in the early days was becoming self-sufficient. Obviously, it is desirable to be able to do everything yourself and we didn't really trust others to print our material. We are now one of the few companies offering a one-stop service for cassette production and at a push, we could probably have a fully packaged and labelled cassette in the shops within 48 hours of the program being completed."

Fighting words indeed, but watching all of that formidable machinery at work is a fair testimony to the claim. In this heady, progressive atmosphere it is not surprising that certain members of the artroom set up their own company, producing particularly gruesome fantasy masks, hands, eyeballs and anything else they could encase in latex.



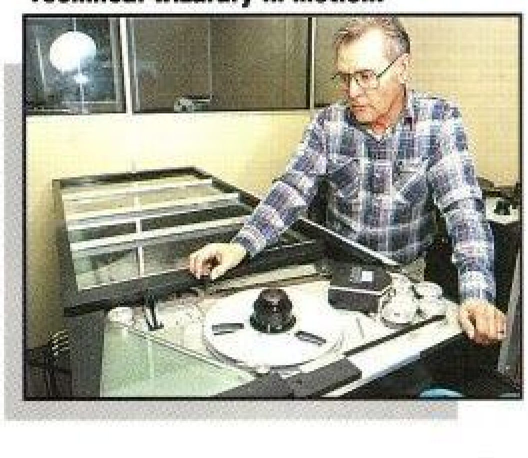
**Copycats at work.**

Interceptor will continue to release exciting games on its various labels, but through shrewd business moves, Richard Paul Jones has ensured that, whatever befalls the software market, Interceptor will continue to grow through production of booklets and cassettes, from religious material to fitness, in a host of different markets.

"Interceptor has changed radically over the years as it has grown up, as have the industry and the users. We really are one of the old dinosaurs of the trade."

That's as maybe, but with Richard Paul Jones, founder and MD of the company at its helm, this dinosaur is certainly in no hurry towards extinction.

**Technical wizardry in motion.**



# ROCK DANGEROUS

## BY DAVID HALL

Although this is a game, it will also improve your knowledge of keyboard layout and your reactions. Rocks falling down the screen have a letter on them and your task is to hit the corresponding letter on the keyboard. Full instructions are given at the beginning of the game. It's quite an education.

```
10 a$(1)="G A M E  O V E R !":a$(2)="WOW! That's Amazing!":FOR t=32000 TO 32009
:READ a:POKE t,a:NEXT:l=10000:FOR k=1 TO 5:READ a$:FOR t=1 TO LEN(a$) STEP 2:POK
E l,VAL("&"+MID$(a$,t,2)):l=l+1:NEXT:NEXT:INK 0,0:INK 1,15 [AB]
20 GOSUB 90:MODE 0:BORDER 0:PAPER 0:CLS:PAPER 12:PEN 9:LOCATE 1,21:PRINT STRING$
(20,207);:a=640:b=62:c=2:d=6:FOR x=1 TO 2:FOR t=1 TO 4:DRAWR a,0,d:DRAWR 0,b:DRA
WR -a,0,c:DRAWR 0,-b:MOVER 2,2:a=a-4:b=b-4:NEXT:e=c:c=d:d=e:NEXT:PAPER 0:PEN 11:
LOCATE 2,23 [77]
30 PRINT "ScOrE    ";:PEN 3:PRINT "*          *":PEN 8:LOCATE 2,24:PRINT "Stryper r
ule OK !!":CALL 10000:s=PEEK(30013):b(1)=50:b(2)=4:SPEED INK b(s),b(s):PEN 13+s:
LOCATE 1,11:PRINT a$(s):FOR h=1 TO 3000:NEXT:i$=INKEY$:WHILE i$<>"":i$=INKEY$:WE
ND [4D]
40 DATA 1,0,0,32,3,0,15,3,0,0:a=RND*40:a=a+300*(2-s):SOUND 1,a,3,12:i$=INKEY$:IF
 i$="" THEN 40 ELSE 20 [F0]
50 DATA CD3E27210000223A75223C75CD0F28CDBB27CD9427CD9F27CD61273A3D75FE00C03AA861
FE3028E43E02323D75C921A861060636302310FB3E01CD90BB260C2E17CD75BB21A86106067ECD5A
BB2310F9C92A3A750616CD26BC10FB7EFE0028063E01323D75C90E17545DCD29BCE506087E122313
10FAE10D [72]
60 DATA 20EE2A3A75CD26BC223A75C90EFA06010010FD0D20F8C93E15CD1EBBC83E15CD1EBB20F9
3E15CD1EBB28F93E15CD1EBB20F9C9CD09BBD0E6DF473A3C75B828053E07C35ABB1127292A3A75CD
6428AF323C75CDF527CDE327C3E32721AB617E3CFE3A280477C3482736302B18F13E2032037D3E0F
F521037D [32]
70 DATA 3532067D21007DCDAABCF13D20EEC93A3C75FE00C03E0ACD96BB3E02CD90BBED5FFE0028
FA47AF3CFE1328FA10F9F521FEC7110400193D20FC223A75CD6128F13C672E02CD75BBED5FFE0028
FA473E403CFE5B28F910F9323C75CD5ABBAFC396BB1177280E16E506081A77231310FAE1CD26BC0D
20F0C900 [21]
80 DATA 00050F0F0A000000050F0F0F0F0A00000F0E0D0F0F0F00000F0C0D0F0F0F00050F0C0D0F
0F0F0A050E0C0F0F0F0F28050E0D0F0F0F1E0A0F0E0D0F0F0F0F3C0F0F0F0F0F0F1E1E0F0F0F0F0F
0F2D3C0F0F0F0F0F0F1E3C0F0F0F0F0F0F2D3C0F0F0F0F0F1E1E3C0F0F0F0F0F0F3C3C0F0F0F0F0F
1E1E3C05 [F0]
90 DATA 0F0F0F0F2D3C28050F0F1E1E1E3C28050F2D2D2D3C3C28001E1E1E1E3C3C00003C3C3C3C
3C3C0000143C3C3C3C28000000143C3C2800000000000000:MODE 1:PEN 1:LOCATE 11,2:PRINT
"** ROCK DANGEROUS **":PRINT:PEN 3:PRINT:PRINT "  Destroy the meteors by typing
in the" [2C]
100 PRINT "  letter engraved on them before they ":PRINT " hit the ground and de
stroy our planet":PRINT " completely.....":PRINT:PRINT " Zap all 500 rocks to wi
n the battle .":PRINT:PEN 2:INPUT "Skill (1=Fast or 2=Slow) ";k:POKE 10133,-253+
(254*k):RETURN [5F]
```

# SCREEN INVERTER

## BY DAVID HALL

A handy utility, especially for those who like to program whilst standing on their heads! Seriously though, all you have to do to operate this useful tool is run it, using CALL 40000.

```
10 ' ** SCREEN INVERT ** by David Hall
20 ' RUN the program then use:-
30 ' CALL 40000 (in ANY mode)
40 '
50 MEMORY 39999:FOR h=40000 TO 40035
60 READ a$:POKE h,VAL("&"+a$):NEXT:END
70 DATA 21,00,C0,11,80,FF,0E,64,C5
80 DATA E5,D5,06,50,4E,1A,77,79,12
90 DATA 23,13,10,F7,E1,CD,29,BC,EB
100 DATA E1,CD,26,BC,C1,0D,20,E5,C9
```

# CIRCLE

## BY M. FOSTER

Write your own message and watch it appear in circular form with this neat 10-liner. Changing the string TEXTS in line 10 you can write what you will and if you play around with the height (he), width (le) and thickness (th) variables in line 20, you can make it look just that little bit different.

```
10 MODE 1:mo=16:INK 0,0:INK 1,26:INK 2,6:INK 3,24:BORDER 0:TEXT$=
"CIRCLE WRITER by COMTEC"
20 le=120:he=120:th=64:x=320:y=200:col=1
30 length=LEN(text$):steps=360/length:sti=steps/mo:thi=th/mo:col=1
40 LOCATE 1,25:PRINT TEXT$
50 FOR nu=0 TO length-1
60 FOR i=0 TO mo-1:FOR o=0 TO mo-1
70 IF TEST((nu*mo)+i,o)<>0 THEN 90
80 NEXT o,i,nu:END
90 de=-(nu*steps)-sti*i-180:th=thi*o:DEG
100 PLOT x+(le+th)*COS(de),y+(he+th)*SIN(de),col:GOTO 80
```

# RAINBOW SCAPE

## BY CHRIS WOOTTON

A simple but very effective graphics demo. Watch as the rainbow slowly appears, rising over a verdant horizon of hills, and let it soothe your troubled minds. Perfect for those little breaks between hard programming.

```
1 'Rainbow-Scape [71]
2 'by Chris Wootton [72]
3 ' [73]
10 MODE 0:FOR a=0 TO 10:READ b:INK a,b:NEXT:ORIGIN 320,0 [B9]
20 FOR r=150 TO 122 STEP -4:c=c+1:FOR y=2 TO r-2 STEP 2 [4E]
30 x=SQR(r*r-y*y)*2.5:MOVE -x,y*2:DRAW x,y*2,c:MOVE -x,y*2+2 [41]
40 DRAW x,YPOS,c:NEXT y,r:FOR b=0 TO 1:RANDOMIZE 8.79+b/38 [71]
50 y=20:FOR a=-320 TO 320 STEP 4:y=y+INT(RND*8)-3:MOVE a,0 [B1]
60 DRAW a,y,4-b:NEXT a,b:DATA 1,6,15,24,9,1,2,16,1,0,9 [88]
```

# THE SINGER

## BY RICHARD SHEPARD

Fancy yourself as a singer on the small screen? This smart program draws a face and when a speech is sent down the cassette lead, its mouth opens and closes in time to the voice. While 464 users can record the voice and play it on the built-in player, 6128 and 664 owners have to connect a cassette player first.

```
1 OUT &F700,9
10 PEN 1:PAPER 0:MODE 1:a$=CHR$(143):INK 0,1:INK 1,24:INK 3,24
20 PRINT" "+STRING$(10,a$):PRINT a$+a$+a$+"  "+a$+a$+"  "+a$+a$+a$
30 PRINT a$+a$+a$+"  "+a$+a$+"  "+a$+a$+a$:PRINT STRING$(12,a$)
40 PRINT STRING$(5,a$)+"  "+STRING$(5,a$):PRINT STRING$(5,a$)+"  "+STRING$(5,a$)
50 PRINT STRING$(12,a$)
60 PRINT a$;:PAPER 3:PEN 0::PRINT STRING$(10,CHR$(95));:PEN 1:PAPER 0:PRINT a$
70 PRINT STRING$(12,a$):PRINT" "+STRING$(10,a$)
80 a=INP(&F500):a=a AND 128
90 IF a=b AND b=c AND c=d AND d=e THEN INK 3,24 ELSE INK 3,1
100 e=d:d=c:c=b:b=a:GOTO 80
```

# ODD ONE OUT

This little brain-teaser should keep you amused for a while. Pick the odd word out from the sets of four as they appear on the screen and mark your success with the musical fanfare.

## BY MATTHEW PINDER

```
10 DIM w$(48):FOR r=1 TO 48:READ w$(r):NEXT r
20 MODE 1:z=INT(RND*16)+1:a=(z*3):b=(z*3)-1:c=(z*3)-2:z=INT(RND*48)+1:d=z:IF z=a
 OR z=b OR z=c THEN GOTO 20
30 z=LEN(w$(a))+LEN(w$(b))+LEN(w$(c))+LEN(w$(d))+6:v=INT((40-z)/2):LOCATE 15,1:P
RINT"ODD ONE OUT":LOCATE 15,2:PRINT"***********":LOCATE v,12:x=INT(RND*3)+1:IF x
=1 THEN PRINT w$(a);"  ";w$(b);"  ";w$(c);"  ";w$(d):GOTO 70
40 IF x=2 THEN PRINT w$(b);"  ";w$(d);"  ";w$(a);"  ";w$(c):GOTO 70
50 IF x=3 THEN PRINT w$(c);"  ";w$(a);"  ";w$(d);"  ";w$(b):GOTO 70
60 PRINT w$(d);"  ";w$(c);"  ";w$(b);"  ";w$(a)
70 LOCATE 1,24:INPUT"Odd one out is";odd$:IF LOWER$(odd$)=LOWER$(w$(d)) THEN LOC
ATE 1,24:PRINT SPACE$(30):LOCATE 1,24:PRINT "Correct - Well done!!":FOR r=1000 T
O 1 STEP -25:SOUND 1,r,5,15,1:NEXT r:FOR r=1 TO 2000:NEXT r:GOTO 20
80 LOCATE 1,24:PRINT"Wrong - Odd one out was ";w$(d):FOR r=1 TO 1000 STEP 25:SOU
ND 1,r,5,15,1:NEXT r:FOR r=1 TO 2500:NEXT r:GOTO 20
90 DATA "London","Moscow","Paris","America","Britain","Australia","Goldfish","Pi
ke","Herring","Robin","Sparrow","Lapwing","Lancashire","Oxford","Yorkshire","Pre
ston","Wigan","Manchester","Ribble","Mersey","Severn","Amstrad","Spect
rum","Commodore"
100 DATA "Dog","Cat","Gerbil","Michael","Martin","Matthew","LOCATE","PLOT","PRIN
T","Square","Oblong","Sphere","Football","Rugby","Cricket","Lemon","Lime","Orang
e","Potato","Carrot","Beetroot","Rock","Pop","Rap"
```

# SKULLS

A clever graphics demo which is not for the faint-hearted. Run the program, turn the lights down and watch the skulls appear on the screen one after another, suspended on ropes, and then see them begin to flicker into life.

## BY NICK HUTTON

```
10 MODE 1:INK 0,0:BORDER 0:INK 1,6:INK 2,16:INK 3,24
20 FOR c=0 TO 2:ORIGIN c*100-100*(c=2),0:RESTORE:fa=c+0.7:FOR b=1 TO 57:p=1:READ
 dx,dy:IF dx>200 THEN dx=dx-200:p=5
30 dx=dx*fa:dy=dy*fa:GOSUB 70:NEXT:NEXT:f=10000
40 FOR b=0 TO RND*100:FOR a=1 TO 3:INK a,24:CALL &BD19:CALL &BD19:INK a,0:NEXT a
,b:FOR b=0 TO RND*100:FOR a=3 TO 1 STEP -1:INK a,24:
CALL &BD19:CALL &BD19:INK a,0:NEXT a,b:GOTO 40
50 DATA 223,8,30,7,54,7,72,22,76,24,62,47,66,42,78,47,93,57,94,68,266,42,92,36,1
03,38,114,67,112,102,98,121,87,138,52,144,23,128,6,6
8,7,55,26,45,30,40,20,25,20,17,23,8
60 DATA 209,58,18,54,25,53,36,58,36,785,25,83,15,77,9,58,242,57,45,58,52,34,46,2
7,42,35,36,27,32,30,42,57,256,57,57,75,63,83,78,78,9
0,70,90,60,73,55,59,56,56,57,283,100,85,90,87,83,214,83,19,91,20,99
70 IF p=5 THEN 110
80 ux=dx-x:uy=dy-y:IF ABS(ux)>ABS(uy) THEN 100
90 s=SGN(uy):f=2*ux/uy:g=x:FOR a=y TO dy STEP 2*s:PLOT g,a,pe:pe=pe+1+3*(pe=3):g
=g+s*f:NEXT:GOTO 110
100 s=SGN(ux):f=2*uy/ux:g=y:FOR a=x TO dx STEP 2*s:PLOT a,g,pe:pe=pe+1+3*(pe=3):
g=g+s*f:NEXT
110 x=dx:y=dy:RETURN
```

# Pipe Mania!!

## ADDICTION BEYOND BELIEF!!

**C and VG Feb 1990 94%**
Pipe Mania is "a classic puzzle arcade game that is so addictive, it should come with a Government Health Warning!"
Pipe Mania is a game of great ingenuity, simple in concept and friendishly challenging to play.
You'll need to act instinctively, but think strategically!
One wrong move, one brief hesitation or mis-placed pipe section, and you'll drown in a sea of slime!

**ST Action**
"Pipe Mania is a conceptually simple and cheeky game which is incredibly addictive"

**Commodore User Screenstar**
"Terrifically addictive... outlasts any arcade conversion"

**AVAILABLE FOR**
Commodore Amiga
IBM PC and Compatibles
Atari ST
Commodore 64 Cassette
Commodore 64 Disk
Spectrum Cassette
Spectrum Disk
Amstrad CPC Cassette
Amstrad CPC Disk
MSX
BBC Electron Cassette
BBC Disk
Apple Macintosh
Achimedes










**Zero March 1990 92%**
"Buy this game and you may never sleep again"

**The Games Machine Star Player Award 83%**
"A puzzle game of great ingenuity and addictivity, Pipe Mania is simple in concept, fiendishly challenging in play, and attractive to look at"

**Zzap Sizzler**
"Absolutely guaranteed to drive you round the bend"

**Amiga Computing Excellence Award 95%**
"A game with a game play that shines"

**Game Players Award USA**
"Best PC strategy game of 1989"

C+VG HIT!

AMIGA FORMAT GOLD

THE One FOR 16-BIT GAMES

machine STAR PLAYER

ZERO HERO

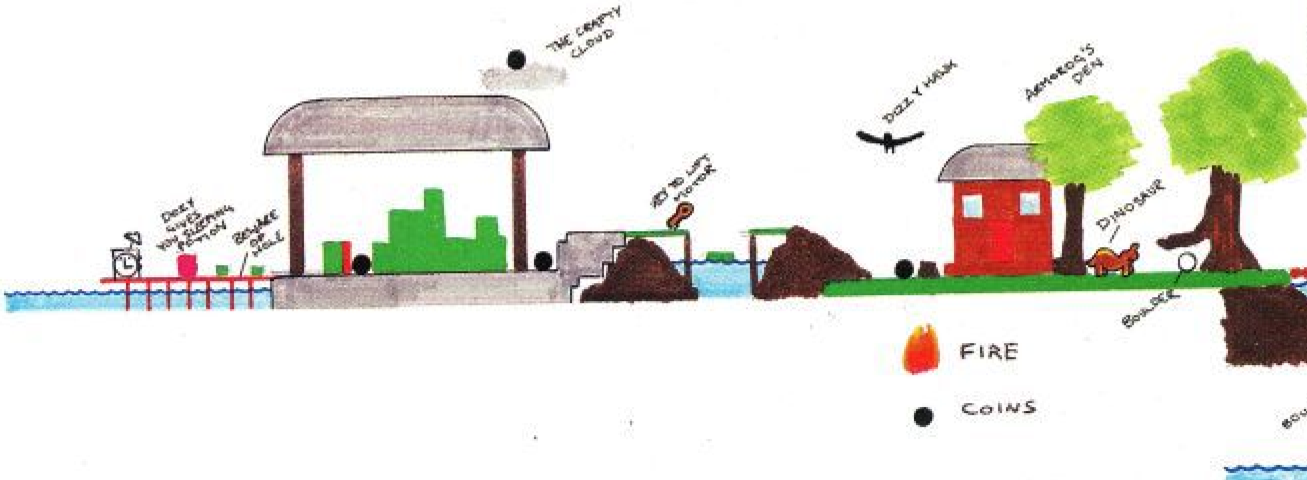
GAME Players GAME OF THE YEAR

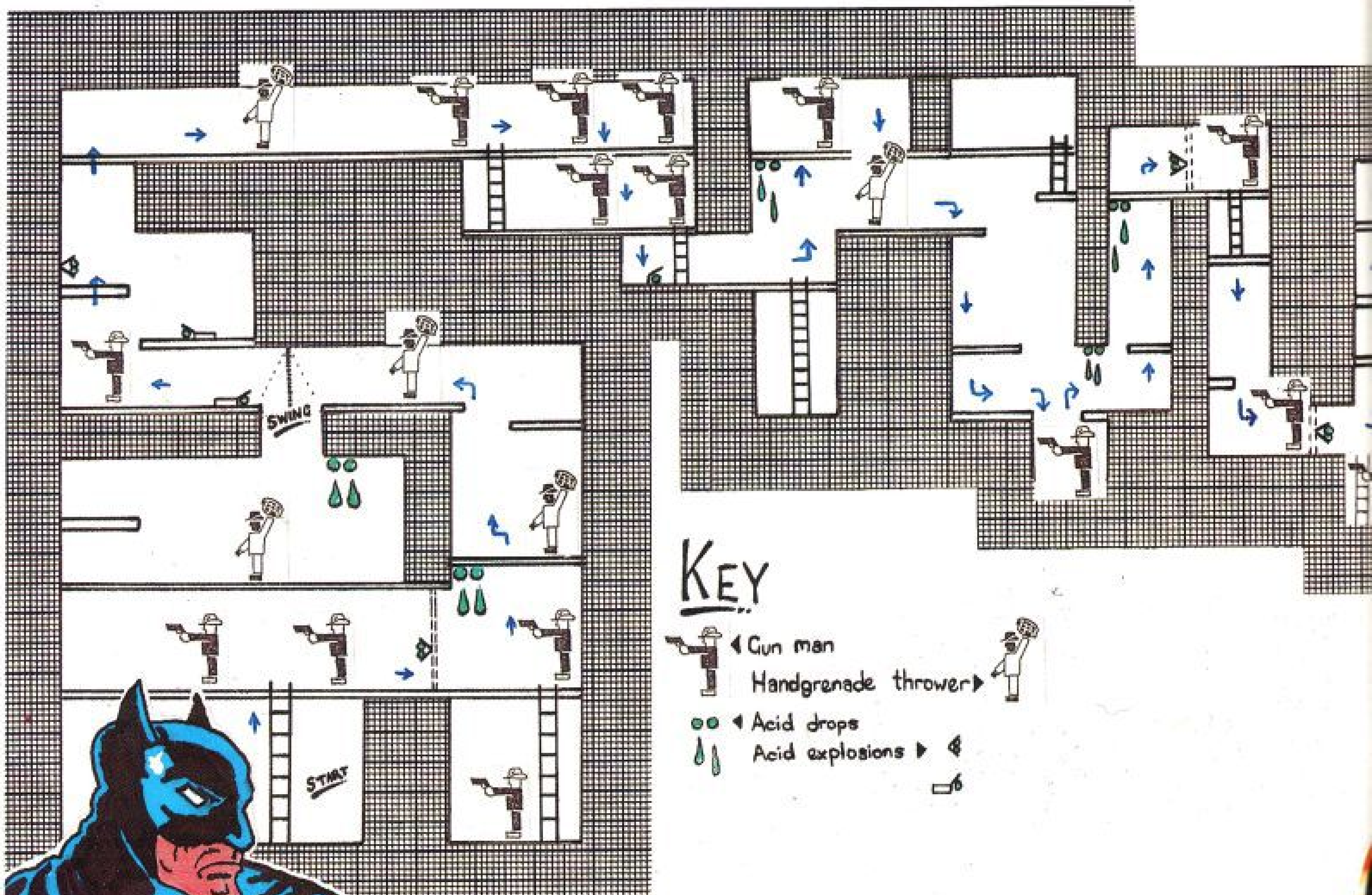
EMPIRE

4 The Stannetts • Laindon North Trade Centre • Basildon • Essex • SS15 6DJ

Vax is taking a well earned break this month to spend time with Suz, Kate and a new addition to the Hacker household! In the meantime we have gathered these three maps together, kindly sent in by eager readers. Top right is a guide to the first five levels of Kettle, by Peter Mardle. Each level is separated by a trapdoor represented by the "=" symbol. To open them you must use the keys in the vases. Richard Ward-Davies and Paul Clalahan's Batmap needs no explanation. Dizzy III, top left, was sent to us by Gary Smith of Cumbria. We will print the second part of it next month. Cheers lads. Anyone else with any handywork they would like to be considered for publication should send it into us, with an SAE if they want it returned.



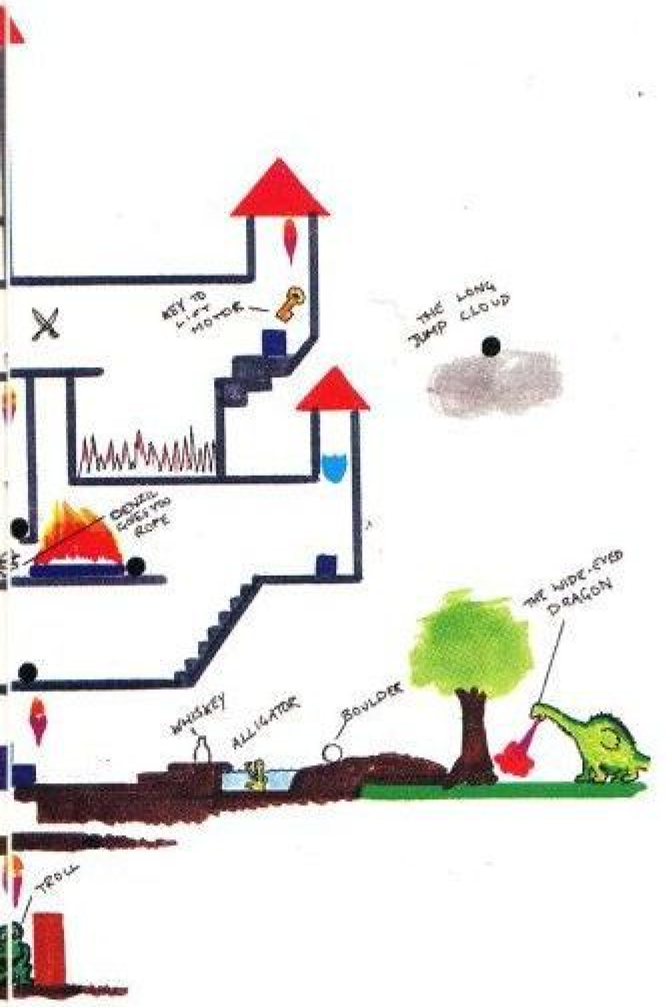



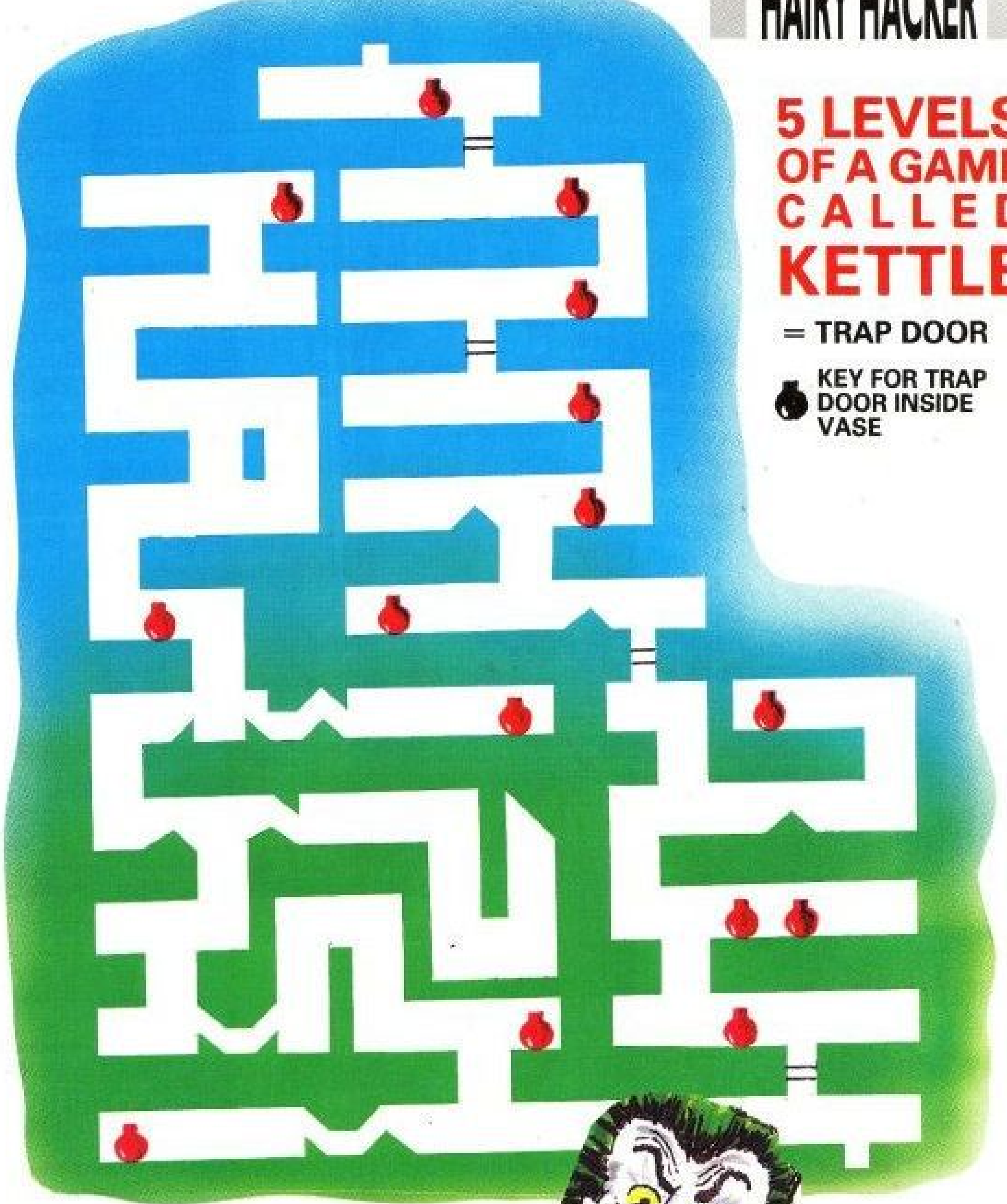



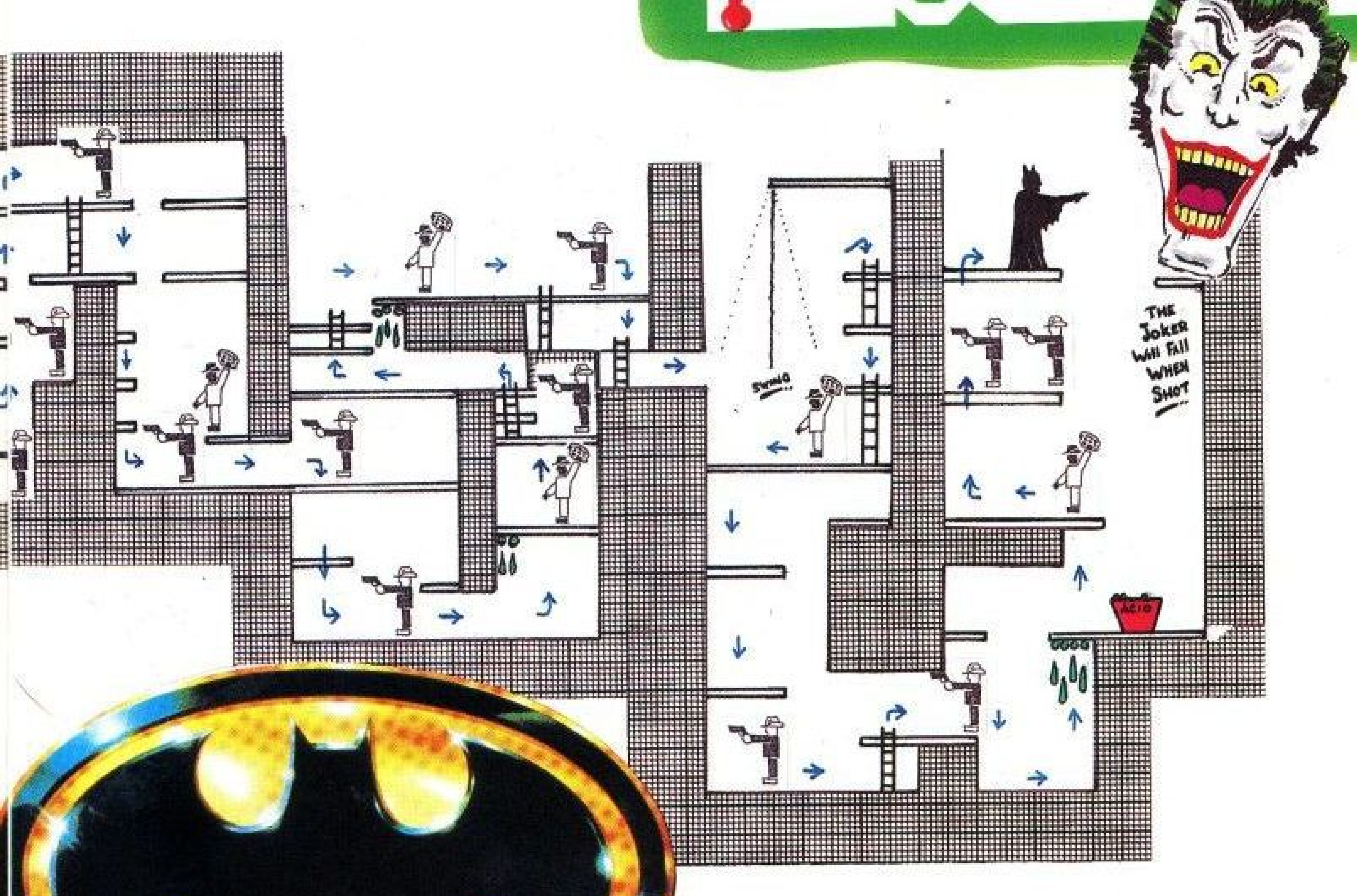

# THE BATMAP

by Richard Ward-Davies and Paul Clalahan.

# 5 LEVELS OF A GAME CALLED KETTLE



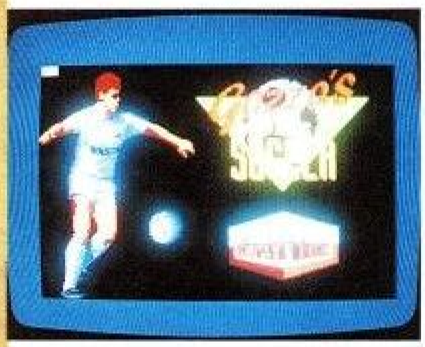
We preview Cyberball, the futuristic gridiron extravaganza from Domark, get into the goal scoring action with Gazza's Super Soccer and go singin' in the rain with the colourful Rainbow Island.

# GAMEPLAN



## CYBERBALL

**Guide your team of cyborgs around the hazards of a twenty-first century American Football pitch.**



## GAZZA'S SUPER SOCCER

**Help Gazza put the leather in the back of the net in this long awaited soccer simulation.**




## RAINBOW ISLAND

**Bob and Bub must escape the rising flood and beat the evil Von Blubba.**

## PLUS

**Ikari Warriors, Myth – History in the Making, Tusker, Wild Streets and our budget round-up.**

## TOP 20

| Pos | Last | Title | Publisher |
|---|---|---|---|
| 1 | (NE) | Robocop | Ocean |
| 2 | (1) | Operation Wolf | Ocean |
| 3 | (NE) | After Burner | Activision |
| 4 | (2) | Thunder Blade | US Gold |
| 5 | (NE) | Big Foot | Code Masters |
| 6 | (7) | Joe Blade 2 | Players |
| 7 | (5) | Bomb Jack | Encore |
| 8 | (6) | Advanced Pinball Simulator | Code Masters |
| 9 | (8) | Commando | Encore |
| 10 | (4) | Giants | US Gold |
| 11 | (NE) | Treasure Island Dizzy | Code Masters |
| 12 | (9) | Ghostbusters | Mastertronic |
| 13 | (3) | Air Wolf | Encore |
| 14 | (NE) | Last Ninja 2 | System 3 |
| 15 | (10) | BMX Freestyle | Code Masters |
| 16 | (NE) | Yabba Dabba Doo | Bugbyte |
| 17 | (NE) | Stunt Bike Simulator | Firebird |
| 18 | (NE) | Death Stalker | Code Masters |
| 19 | (NE) | Ace 2 | Cascade |
| 20 | (NE) | International Speedway | Firebird |

Sales period ending February 18
Top 20 compiled by Gallup

"January, 2022 – the last human to play the game of American Football, Dave 'Rocket' Ralston, makes his final appearance, playing wide receiver for Houston. His performance on this day is tragically cut short when he is decapitated by a face-masking violation."

This is an excerpt from the annals of the evolution of Cyberball.

The crowd is silent in anticipation; the stadium throbs to the sound of heavy steel tracks manoeuvering into position on the grid; the timer is primed to zero, and to the racous wail of the siren, the game begins.

# Cyberball

## Iron meets iron in this preview of Domark's futuristic gridiron spectacular.

Three hundred and fifty pounds of steel and highly-explosive material is punted upfield, and waiting in the end zone to catch it are the, hopefully, safe hands of one of your own players; a twenty foot tall robot.

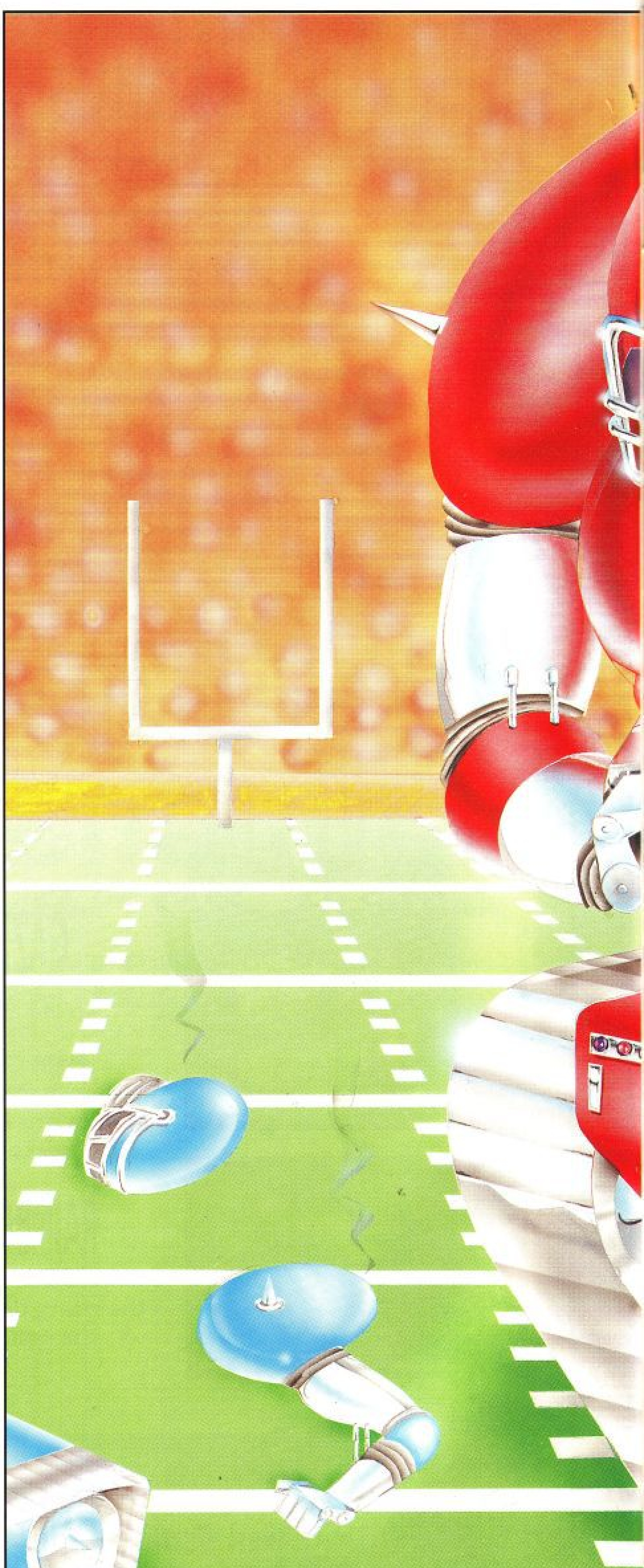
Set in the 21st century, Cyberball is a 'no pain, no gain' cruncher of a game for one or two players. The first choice you have to make is which league you want to play in. For novices, the Instructional Division provides well-balanced teams with accurate passers and good runners. But if you want to be a little more in control, pick one of the large selection of squads from the Pro-League and you'll soon find out where their strengths and weaknesses lie.

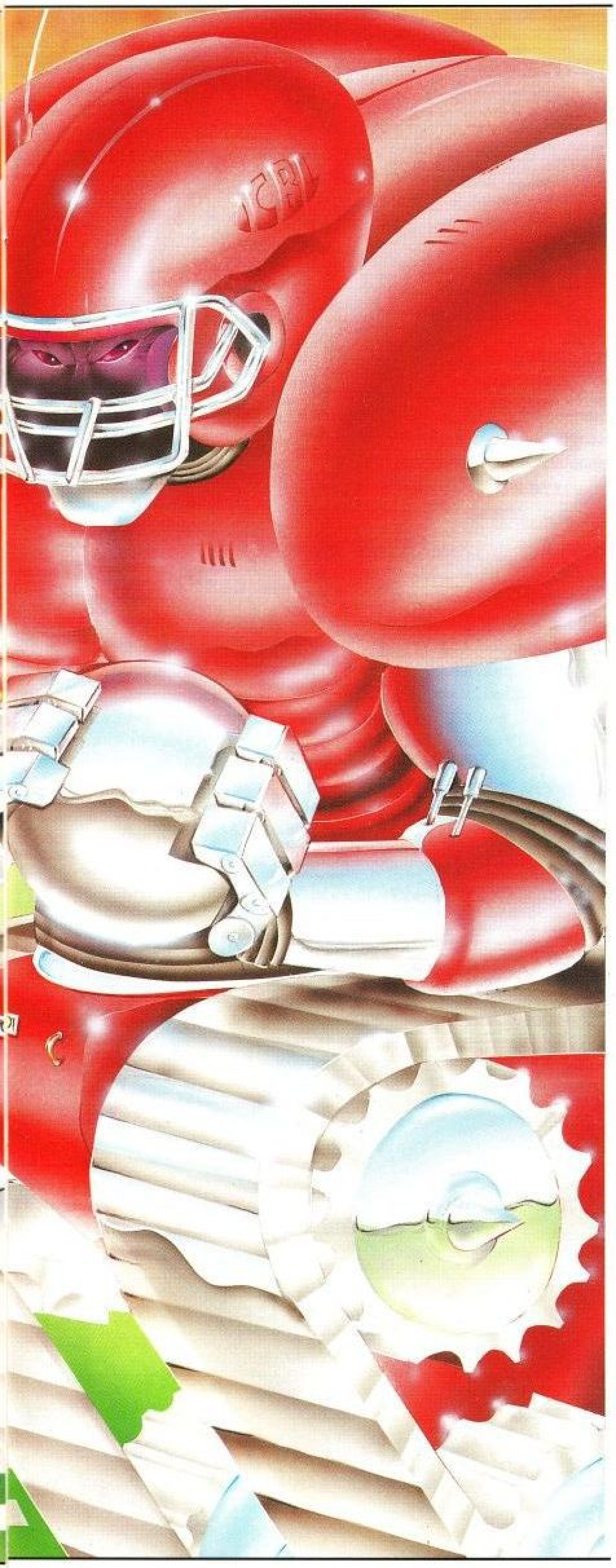
For those of you who don't know a great deal about American Football, a good look through the comprehensive game manual is a must before hitting the field, but seasoned gridiron fans will love the detail that has been painstakingly programmed into the game to make it surprisingly like the real thing.

Picking a team from such great names as the Chicago Killers or the Miami Terminators, you and your partner are pitted as the offense and defense against an opponent of the computer's choice. You can't play against each other unfortunately, but there are more than enough random plays from the computer to make up.

So, you've been brought down on your own 30 yard line after receiving from the







kick-off. With over 30 running plays and just as many passing plays to choose from, you can make your offensive game just as varied as you like. This is advisable because if you don't, the computer will get used to your strategy and



wipe the floor with you. A Fender Bender or a Slammer should put the opponents on their guard, and throwing a Corner Pocket could well see you on the way to a touchdown.

There are also optional plays available which allow you to run or pass for those who just can't make up their minds.

On each play, crosses on the field show clearly where receivers are heading, allowing you to time your passes to perfection. When the ball leaves the quarterback's hand, it is up to you to control running backs and receivers wisely.

Got the hang of it so far? Right, this is where it starts getting tough. Starting off your offensive play, you will notice a pink line running tantalisingly across the field ahead of you. This is the defuse line. Each time a play is made, the ball of explosive material you hold in your hands gets hotter, going from cool to critical in a number of stages. Crossing the defuse line will bring the ball off the boil, as it were. But, if you fail to cross the line, make sure none of your players are holding the ball when it explodes.

On the other hand, when you're on the defensive, picking the right play should ensure the explosion occurs in the computer's court. In the defense mode, you are also given a much needed turbo boost facility to catch up on those speeding offensive attackers.

Scoring is very similar to the real game, with six points for a touchdown and one or two points for the conversion, depending on whether you throw the ball or kick it into the end zone. But make sure you succeed, as the ball automatically turns to critical following a touchdown, and you only get one chance.

For each score, money is added to your team fund, which helps to replace players that are beginning to smoulder through wear and tear.

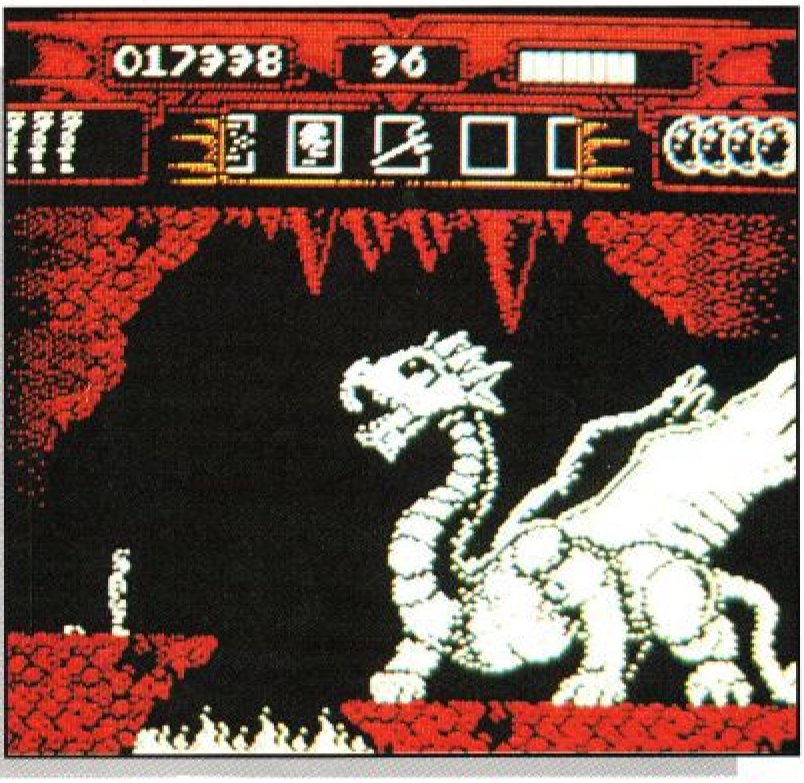
Controlling all of the plays using the joystick may look incredibly complicated to start with, but soon enough you'll begin to work out your favourite moves and start notching up the points.

The main advantage that the CPC version has over the larger formats is the speed of play. Unlike the Amiga game, which has an angled overhead view of play, the CPC graphics look directly down onto the teams which may lose some of the 3D effect, but look wonderful and greatly improve playability.

**Chris Knight**

**ROUND-UP**

| | | | |
|---|---|---|---|
| NAME | Cyberball | | |
| FROM | Domark | PRICE | Disc £12.99<br>Cassette £9.99 |
| 89% | 82% | 85% |  |
| GRAFFIX | SONIX | PLAYABILITY | VERDICT |



# Myth: History in the Making

**A fine mixture of arcade and adventure as you battle your way through the shadier side of history.**

From the past comes the future, from the future comes the destruction of the past. As titans battle and gods bicker, the forces of evil choose their moment well, and pounce. Through the manipulation of the past, the dark god Dameron seeks to destroy mankind, and only a child pure of heart and staunch in his beliefs can purge this evil. Only you can save the world. As you set out on your quest, the dead rise with a jerking gait to bring you down. A well placed fist can alleviate the troubled animations of their miserable existence and reward the hero with a skull. While bashing skeletons and leaping from platform to platform, you will encounter closed chests and vases which, when given a hefty boot, will reveal extra energy along with powerful fireballs. To switch from one attack form to another, hit the space bar and scroll through your inventory of destructive items.

Breaking skulls and timing jumps is only part of the game as you will face many puzzles in your quest for the teleport icons which will send you spinning through the centuries. But to get to these icons means battling past monsters of ferocious proportions, and make sure you have the right weapon with you when you do or you could meet with an untimely end.

Past Achilles and Greek myth, you travel to the realm of the Norse gods. Overcoming beasts of earth and fire, you must travel until you encounter the corrupted lord of gods, Odin. No ordinary weapon will be of any use here, but this once noble god must be dispatched with if progress is your aim.

Much of the game's puzzle revolves around finding a use for the many items you can collect on the way and, although the instruction manual provides a few hints, the rest is up to you. It is no easy task, especially as you work your weary way through the mysteries of the Egyptian era and beyond.

When a being of evil dimensions takes a swing at your head, don't duck. In this game down means a small upwards leap, if you see what I mean, and it can land you in some very tricky situations, like a pit of fire, for example.

Many of the items you collect are limited in number, so judicious use is recommended. Another tip is to keep your eyes open, even in retreat, as there are many hostile features in the landscape. The aforementioned pits of fire are deadly, but the first level is also interspersed with fume holes. Stand on one of these during an eruption and your health suffers.

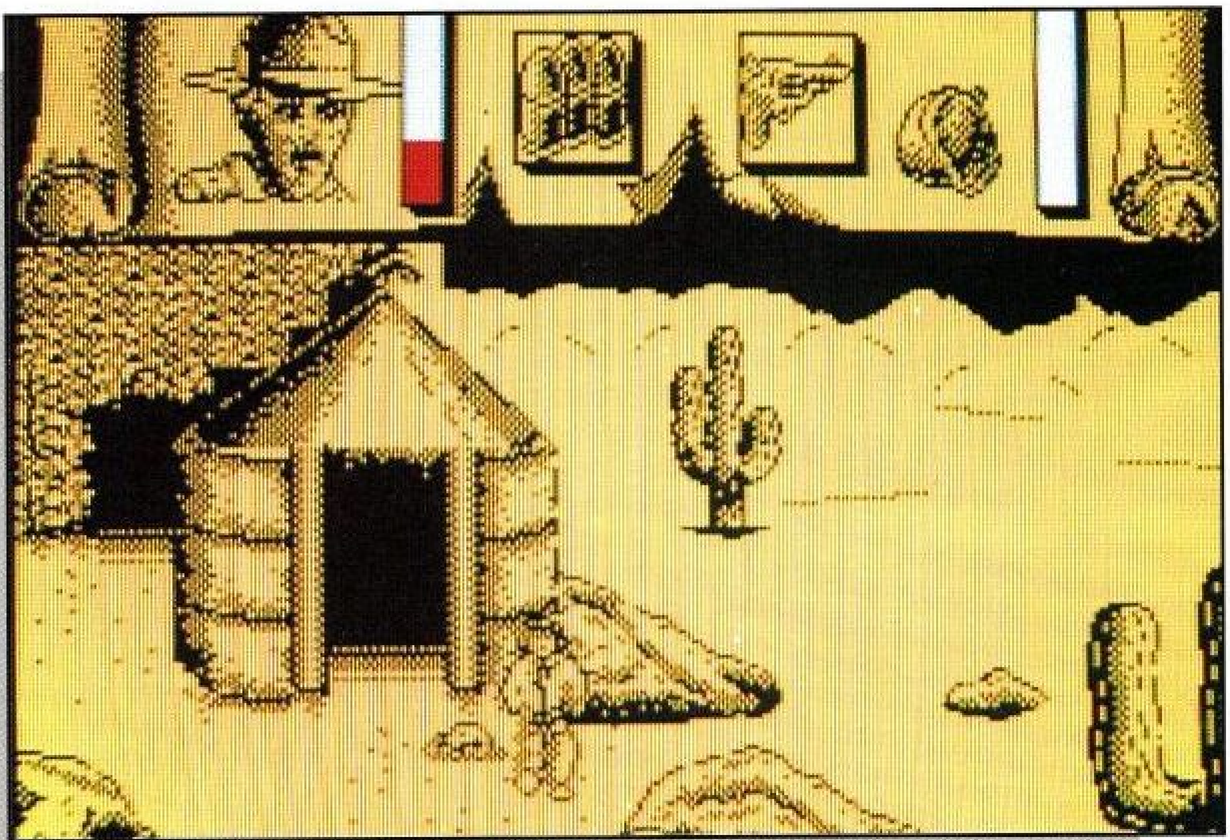
The animation of the minor baddies of these mythological climes is good. As you strike, they react by staggering back before once more launching themselves into the fray. When battling with the monstrous guardians, a far cooler head is needed. These fearsome beings may not move, but the barrage of missiles they can inflict upon the hero is staggering. The best way of getting through to them is to find a relatively safe place to stand and jump up.

Although a little confusing at first, controlling the hero is good once you get the hang of it. But beware, the guardians are tough and the puzzles, though not overtaxing, are enough to put you off balance for a while. Myth brings together a fine mixture of arcade and adventure as you battle your way through the shadier side of history.

**Adrian Pumphrey**



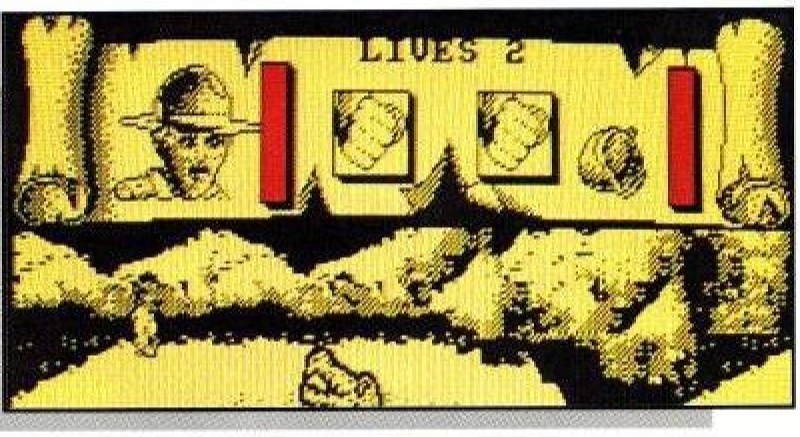
| ROUND-UP | | | |
|---|---|---|---|
| NAME | Myth: History in the Making | | |
| FROM | System 3 | PRICE | Disc £14.99 Cassette £9.99 |
| 83% | 76% | 88% |  |
| GRAFFIX | SONIX | PLAYABILITY | VERDICT |



# Tusker

**A rather yellow effort that sees you struggling across endless landscapes in search of an elusive elephants' graveyard.**

A small raft drifts slowly up the Turkwel river. Atop, a ragged figure lays spreadeagled. Vultures swoop overhead, studying the body for signs of life then land and peck at the flesh. These are the remains of your father, a bedraggled figure skewered to a floating hearse, killed by the unknown in the search for the Elephants' Graveyard.




Does it really exist? Will it ever be discovered? One thing's for sure; Dad won't ever see it.

Three years on and you stumble across your father's personal journal, the contents of which you have never read, at your father's request. The pages are brittle, the contents far more interesting than your father ever let on. Detailed maps, drawings and diagrams fill the browning pages: notes that would lead your father to the Elephants' Graveyard and certain death.

But the book never left his side. Why was it here and not with his body, and what's more why had the last two pages been torn out? Dun, Da Dah!! You decide there and then to retrace his footsteps. Poorly equipped, you head off for Africa.

Miles and miles of yellow sand sprawl out before your intrepid CPC persona. On closer inspection it turns out to be miles of miles of yellow: the whole thing's yellow! The year is 1990 and we are still playing monochromatic games!

So there you are in all your yellowness, surrounded by sand and the occasional yellow cactus. Armed only with your feet and fists you must search the yellow landscape for items that will aid your quest. Daggers allow you to stab hostile Arabs, although the screen representation looks rather rude. Guns would make light work of the assailants if only they were loaded.

Kicking the hell out of the Arabs isn't all that easy thanks to awful joystick control. The pure fact that the Arabs are there seriously hinders your movement around the plain. Talking of movement, what sane person would jog around the desert? Not me for sure, but just as with cartoons, computer games are rarely true to life.

The status area at the top of the screen shows an Indiana Jones lookalike (in yellow of course!) and what you are currently holding in each hand. Your energy appears as a vertical bar in the status area and this provides the only change of colour on the whole screen.

There are many objects littered around the desert, some hidden underground. Down below, further hazards lurk. Statues suddenly spring into life and prod at you with sharp blades and crocodiles snap at your limbs when you wade through the deep subterranean pools. How do you kill them? Simple, poke 'em on the snout!

Tusker is in the class of arcade adventure and if you like that kind of thing then you might fancy the challenge. If you prefer a bit more colour than just yellow then I strongly suggest you look elsewhere. Honestly, you'd think it was a Spectrum game.

**Andrew Banner**

## ROUND-UP

| | | | |
|---|---|---|---|
| NAME | Tusker | | |
| FROM | System 3 | PRICE | Disc £14.99<br>Cassette £9.99 |
| 49% | 35% | 54% |  |
| GRAFFIX | SONIX | PLAYABILITY | VERDICT |



# Rainbow Islands

**Hop from platform to platform to escape the rising flood and beat evil von Blubba.**

The cruel sea stretched and laughed at the weary seamen swimming for driftwood. Drowning was no fun, even for a fisherman. The gulp, the gargling, washed and brushed and wrapped in seaweed and only the bells from the on-shore church prayed for the stormy swimmers. The distant chants from the hard, wooden pews where the sea-farers wished to sit on Sundays and not float with the fish and shrink their jeans in cold, salty water.

When my grandfather sang Bread of Heaven he was one of the tallest men in the village. His neck extended until he was spitting on the bells in the tower with every note of his strong, bass-toned voice. The milk curdled and the animals cowered and the rest of the congregation huddled in fear in the face of passion. "Give us our daily bread", they whispered. They had noticed the flood and recognised the need to jump to higher quarters.

My grandfather consequently recognised the need for a good pair of strong thighs to jump from trouble although as a keen swimmer and Olympic Gold medallist he relished the challenge of water. He also recognised the direction taken by a recent Ocean release entitled *Rainbow Islands.*

Water is the direct enemy in this adventure as our trusty heroes have to jump upwards onto various shelves of land to escape the rapidly advancing water. Bub and Bob were trapped in dragon form for a number of undisclosed centuries. Numerous unlogged adventures returned the unfortunate fellows to humanity whereupon they built the palatial dwelling of the Rainbow Islands.

All was well until the evil Von Blubba descended upon the idyllic isles and imprisoned the inhabitants (probably because of the colour of their surf shorts!) and placed his pink vampires and zombies to guard the levels and cause havoc for our heroes.

There are seven levels representing seven Rainbow Islands. By jumping up onto the different platforms you can collect gems and build rainbows over the deadly creatures that lurk on the levels. This is where the water comes in. It seems to represent the imminent doom of the islands catching up with your attempts to defeat the deadly challenge of Von Blubba. Our heroes unfortunately, are incapable of swimming despite the fact that they live by the sea.

Once you have jumped to the top of the island you must open the treasure chest to reveal the gateway to the next island. Islands are progressively more difficult as you advance through the game. The game is a little limited in its subject matter although the story behind Bub and Bob is interestingly amusing.

Rainbow Islands is a follow-up to Bubble Bobble but adds the flavour of rainbow-making magic to the fingertips of Bub and Bob. The graphics are better than the original game and the screen is fun to look at with cuddly monsters and cutey pie zombies.

It's a likeable game that will grow on the more patient player. My grandfather took to it well but there again he likes a lot of things like colours, water, cutey creatures and a bit of a challenge against an evil man with a funny name.

**Basil Bread**




| ROUND-UP | | | |
|---|---|---|---|
| NAME | Rainbow Islands | | |
| FROM | Ocean | PRICE | Disc £14.99 Cassette £9.99 |
| 45% | 55% | 52% |  |
| GRAFFIX | SONIX | PLAYABILITY | VERDICT |



# Wild Streets

**You and your trusty panther must plod through vertically scrolling streets punching out the lights of assorted baddies.**

The chief of intelligence has been kidnapped. The CIA is counting on your natural survival skills and the hunting instincts of your black panther. You must rescue the chief from the clutches of the evil Mafia, with nothing but a Magnum and an oversized moggy to aid you. The game consists of five levels of fighting against evil thugs who want to turn kitty into a rug and you into mincemeat.

Right from the start the game hits you with a full screen title page and colourful game backgrounds. Such attractive graphics have become a trademark of Titus. The between-level and scoreboard screens really enhance the game and are its main asset. The in-game sprites are colourful but move rather jerkily and tend to slow down when there are more than three on screen at once. The panther has been drawn carefully and paces about menacingly, if rather mechanically. The background graphics do become repetitive as the game progresses but remain colourful throughout. The game is played along a flick screen landscape. I think it would have been better had it been a scrolling landscape as the flick can be slow and somewhat disorientating. The high score table is animated with a silently snarling puma, a novel feature if ever I saw one!

The sound in the game is adequate but doesn't come anywhere near the standard of the graphics. There are three tunes in total, all in a rather similar vein. The in-game tune is reasonable but tends to get repetitive after a while. There is only one tune for all of the five levels which is a shame as different tunes would have given the levels more individuality and helped to break up the monotonous action. The spot effects are rather limited and tinny but serve their purpose.

It is in the playability stakes that the game loses out. It soon becomes repetitive with only one type of baddie to kill on each level. End-of-level guardians are just normal thug sprites which take several hits to kill. The omission of a decent end-of-level challenge is a great shame. The panther adds a little originality to an otherwise antiquated game style. It is apparently here to help you, although only in dire circumstances can it be provoked into doing its party piece, a lethargic but nonetheless lethal leap. Most of the time all your feline friend does is pace about, slowing down the frame rate. I found the joystick controls so fiddly that I had to resort to keys: very annoying. A multitude of moves are available to you but you will be hard pressed to use more than a couple during the game. Once you have mastered the controls there is little incentive to play on through all the levels. The control mechanism for firing the gun is a trifle unusual. If you are near enough to your adversaries to use fists and feet you end up using brawn and not a Beretta to dispatch the enemy. The game has no pause feature which is very annoying as it can take some time to finish. When you finally get to the end of the fifth level and meet up with the hostage you must then trudge all the way back to the start with the chief following obediently to heel. You will then be rewarded with the end screen and tune.

It's a shame to say it but this game looks and plays like the same old Titus formula, great graphics, good sound but gameplay that



just fails to hold the interest after only a few plays. It's the graphics which grab your attention but the action just can't hold it.

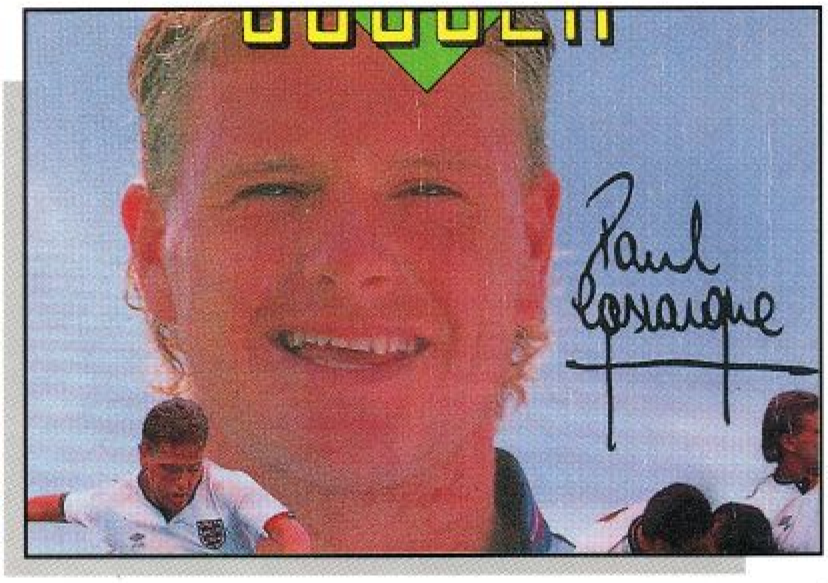
One nice touch is the hall of fame scoreboard in the disc version, which is constantly updated and will give you a permanent record of the ease with which you completed the game.

**Nicholas Hutton**

| ROUND-UP | | | |
|---|---|---|---|
| NAME | Wild Streets | | |
| FROM | Titus | PRICE | Disc £14.99<br>Cassette £9.99 |
| 89% | 74% | 65% |  |
| GRAFFIX | SONIX | PLAYABILITY | VERDICT |

# Gazza's Super Soccer

**Play football as chubby midfield maestro Paul 'Gazza' Gascoigne. Pick that one out of the lobster pot, goalie.**



Personally I don't like Liverpool Football Club, and I can never tell what Kenny Dalglish is saying, apart from "och noo Jimmy", so it was no big deal that *Kenny Dalglish Soccer Match* was a right load of footballs. However, I admit to a certain admiration for chubby midfield maestro Paul Gascoigne, he of the toothy grin and Mars bar diet. There's a lad who could do great things for England, if only crusty old Robson would give the boy a decent chance.



These things said, I view Empire's attempt at producing *Gazza's Super Soccer* with a mixture of disappointment and, em, well, disappointment really. There's the usual one-off option and cup competition, and also the chance to set up a league. Quite innovatively this can consist of up to 20 teams drawn from all the divisions around the league, each with changeable shirt colours and players.

The players have limited statistics which affect their ability down on the pitch, and these can be juggled, just like the players' physical appearances. If you wanted to name your team as Brazil, you could change the shirt colour accordingly, and then make all the players coloured. Possibly the most bizarre option I've ever seen in a footy game, but still a gimmick for all that.

The presentation of the league tables, and all the text aspects of the game is a little sparse, obviously no great artist was working on this conversion.

And so to the pitch and the actual game itself. Could Gazza's Fatty Soccer compete with *Emlyn Hughes International Soccer*? Alas, no, the chubby youngster was seen off by the wily elder statesman.

There are two different perspectives to contend with, depending on whether you are in the middle of the pitch or the final third. In the middle area you get the traditional sideways-on-little-men-ambling-around-like-sheep view, but once into striking range the view shifts to behind the men looking up at the goal. It makes placing one's shot easier and more accurate, claims Empire. It makes you start running sideways as soon as the view changes is what I say. Of course it's all a ruse so that the programmers don't have to scroll the pitch, which isn't easy on the CPC.

Dribbling with the ball is simple enough, but shooting and passing are certainly not. The Boot-o-Meter controls angle and wallop of ball booting, but unfortunately your player stops running while the Boot-o-Meter builds up to full pumping strength. Invariably this invites a tackle from the opposition and loss of possession.

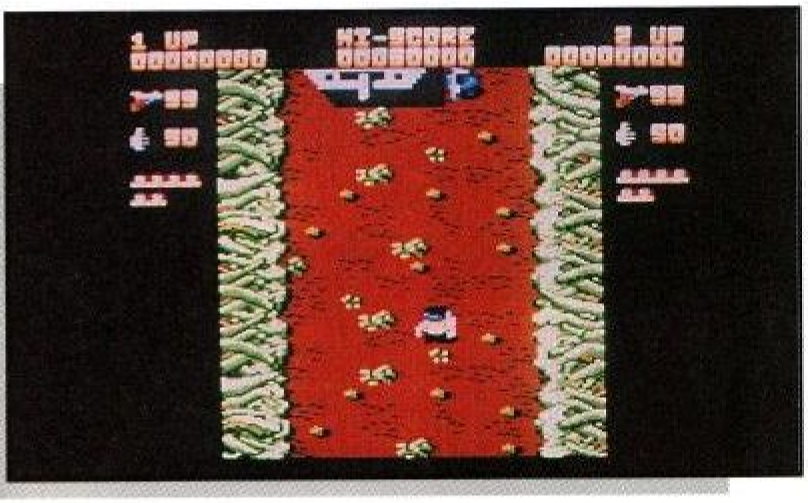
Gazza's Super Soccer is a mild, inoffensive footy game, lacking outstanding features and suffering from slightly iffy gameplay. If Gazza's game was to play Emlyn Hughes's you'd get the impression that Gazza's could go all day and not score while Emlyn would cut through the defence and bag a hatful. In other words, forget it.

**Duncan Evans**

**ROUND-UP**

| NAME | Gazza's Super Soccer | | |
|---|---|---|---|
| FROM | Empire | PRICE | Disc £14.99 Cassette £9.99 |

| GRAFFIX | SONIX | PLAYABILITY | VERDICT |
|---|---|---|---|
| 67% | 65% | 72% | |




# Ikari Warriors

**This is a budget offering of sufficient merit to get its own page: smooth, colourful and well animated.**

The dense undergrowth darkens. The camp fire, the only source of light, flickers and crackles. Flames dance and cast reflections on the sleeping figures of army officers. One upright and resolute figure circles the encampment keeping watch, listening for any approach.

Suddenly a twig cracks underfoot and General Alexander Bonn's head turns to the direction of the noise. Nothing. Hurtling overhead, a grenade drops into the fire. General Bonn dashes for the radio and transmits a mayday alarm. The grenade erupts and destroys the camp and all in it. Bonn rushes from the scene straight into the clutches of the revolutionaries.

Lying asleep, your buddy twitches and is awoken by a loud crackle from the radio transmitter. Tuning the unit he hears the message from Bonn and shakes you awake. Retrieving your ammunition and weaponry, you set off for the heart of the jungle.

You and your mate clamber into the small plane and take off. Climbing over the trees of the jungle the engine coughs and splutters; the propellor stops and the plane takes a nose dive towards the uninviting ground two thousand feet below. The trees break the descent of the aircraft and it comes to land in the soft undergrowth, both occupants bruised but alive.

You and vour buddv are the Ikari Warriors. Your mission, to rescue General Bonn from the revolutionaries, is going to be a tough slog through miles of scrolling jungle. Blue uniformed revolutionaries appear from all sides and open fire trying to pump lead into your sun tanned chest and back. You turn towards the blue baddie and let him have it. The bullets fly and the enemy fall.

One enemy marksman pulls the pin from a grenade and lobs it in your direction. You see it coming and run. Arrrgh! Bang! Things darken. Another man runs on to take his place, invincible at first. Further on a manned gun emplacement takes a disliking to you and your pal. A single grenade will take good care of that one. After the dust settles all that remains is a bit of unexploded ammunition which you can collect.

Survival gets harder later on as more gun wielding thugs stroll onto the scene and take aim. More bloodshed later and you stumble across a tank. It proves too tempting and you both clamber in. Let's see the swines escape the attentions of the caterpillar tracks. And they don't. You can almost imagine the squishy sound of blood and guts under track! But it's all good clean fun. Fuel is limited and it soon gets used. Once the tank is unable to move under its own steam it's back into the jungle on foot for more killing.

Ikari Warriors is just a classic conversion of the SNK coin-op. The scrolling is smooth and colourful and the animation good. Unfortunately your character can get stuck on the scenery and doesn't seem to want to pull loose. In this situation you just have to wait to be killed. Sound effects are good and the action fast. Ikari Warriors was a good buy before but at £2.99 it can't be beaten.

**Andrew Banner**



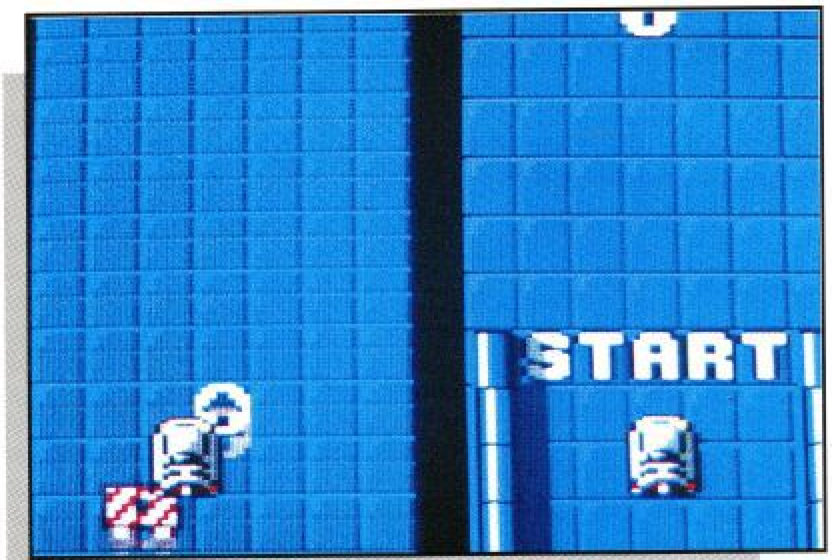

| ROUND-UP | | | |
|---|---|---|---|
| NAME | Ikari Warriors | | |
| FROM | Encore | PRICE | Cassette £2.99 |
| 78% | 76% | 84% |  |
| GRAFFIX | SONIX | PLAYABILITY | VERDICT |

# Budget Basement

**Five more cheapies reviewed, including a rather decent effort from Players called The Race.**

## THE RACE

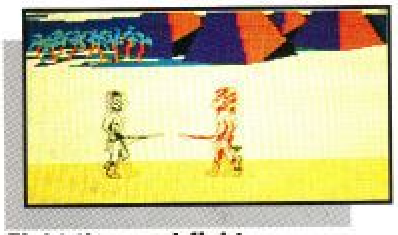
There are six levels of nail-biting tension in this gruelling race against time and your opponent. Burning rubber through Future World, Ancient World, Weird World, Cosmic World, Swamp World and Micro World, you come up against some pretty tough obstacles, including giant frogs, electrical bolts and stone fireball-breathing heads. A tough challenge indeed! *The Race* is extremely playable with some merry jingles, great graphics and smooth scrolling. The gauntlet has been thrown down. Dare you pick it up?




A riot of racing.

## FIGHTING WARRIOR

If you liked the Egyptian reggae, *Fighting Warrior* may well be for you. If not, make sure you have a plentiful supply of water for this dry and dusty desert drama. It would be fair to say that the beautiful princess it is your aim to rescue would have to be very, very pretty indeed to make you undergo this slow-moving adventure. Slugging it out with a variety of monsters such as minotaurs and gryphons may have its moments, but progress across the screen is painfully slow and the graphics are nothing to write home about, so you would do better to pack away your broadsword and head for cooler climes.



Fight the good fight.



In the army now.

## SOLDIER OF LIGHT

Another coin-op conversion from RAD that is bursting with ideas and a joy to watch but, unfortunately, this one is a bit of a struggle to play. *Soldier of Light* has you single-handedly defending the galaxy from Federation infiltrators and although the graphics are great, moving and firing is not easy and indeed can be very frustrating. Between planets, the space cruiser battles are fun and exciting, but progress on land is slow and your inability to move too far backwards is also restricting. You *can* fight through to conquer the third planet but only with a lot of patience; if you are lacking in this quality, you will definitely need a cold bath nearby to keep your cool.

## PRO POWERBOAT SIMULATOR

Racing your high-powered speedboat day and night, over waterfalls and ramps and against all elements is a fun way to pass the time. But what makes it even more fun is having the power to knock your opponent off-course, and laying mines to detonate your rivals. Getting through the first level is easy enough, although getting over-confident will do you no good. As you progress it becomes harder to pick the correct course to the finish line, especially in the dark, and the bonus stage is no doddle either. The sonix are not exceptional, but the action compensates.




Power boating.

## SUPER TANK

Leave the landing craft and prepare for the worst. *Super Tank* is certainly no joyride and you will be fighting every inch of the way as you battle to destroy the enemy and find the exit from each war zone. There are eight zones in all, each of them packed with minefields, enemy tanks, gunposts and lethal homing missiles. To start with, you survey the battlefield from above, but later you get the chance to look straight down the barrel at your enemies, and give them a taste of their own medicine. It takes a little time to get used to controlling the tank, but once you have mastered it, Super Tank is well worth a trial.



Tank's a lot.

**Chris Knight**

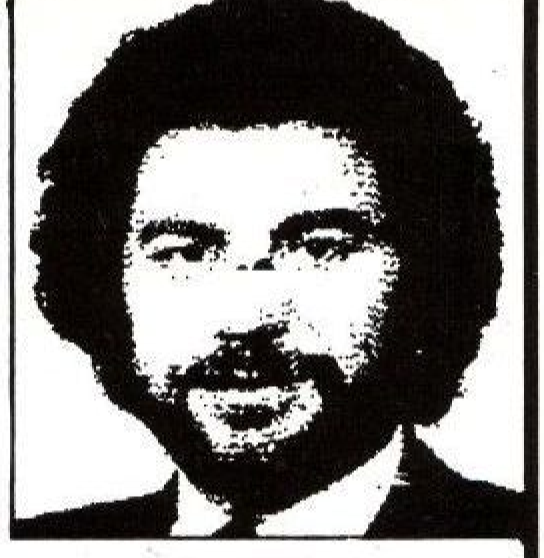
### ROUND-UP

| NAME | FROM | PRICE | RATING |
|---|---|---|---|
| The Race | Players | £2.99 | 86% |
| Fighting Warrior | Mastertronic | £2.99 | 46% |
| Soldier of Light | RAD | £2.99 | 62% |
| Pro Powerboat | Code Masters | £2.99 | 78% |
| Super Tank | Code Masters | £2.99 | 70% |

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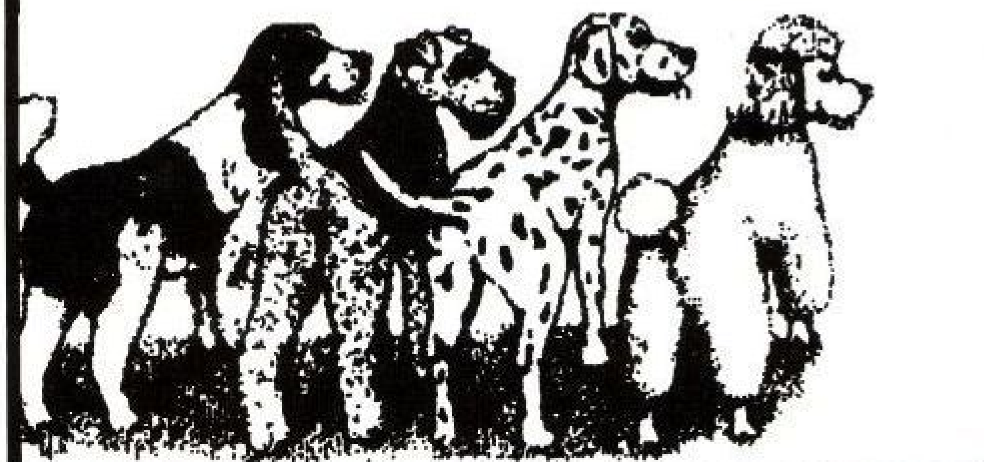
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# It all adds up

## Trevor Cummings contemplates a few CPC add-ons and delves into a pack of cards.

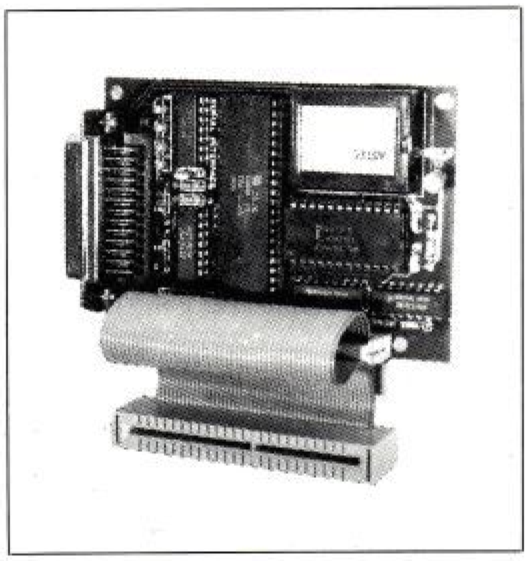
For a number of years now there have been several CPC add-ons lurking around in the background. Their existence hasn't been widely known because they haven't been generally advertised in our magazines. To find them, you almost have to bump into them by accident. And that's just what I did a while ago. There's a Romboard, an RS232C port and a 8-bit printer and parallel port and their importance to us is about to be realised. Cirkit, who make them, are a similar company to Maplins in that they both produce do-it-yourself projects for the electronics enthusiast, both supply parts for one's own projects, both sell ready made units and both sell through their catalogues which we can buy from places like W.H. Smiths. Incidently, the *new* catalogue is due out just about now.

The significance of the Cirkit add-ons is twofold. Firstly, we have just seen the demise of the DkTronics real time clock with general purpose I/O port and, secondly, Pace's RS232C serial interface is about to bite the dust. Pace still have some left but no more are being made. The idea of a real time clock is probably gone forever for the CPC but the I/O port, together with an 8-bit printer port, is one of the Cirkit products. So two of these add-ons might well fill the gaps left by those that have died.

The first thing that struck me about the HS-S1 RS232 card, and its software in particular, was its similarity to the Pace version. Soon afterwards the reason became clear. Both interfaces were designed by Honeysoft. This prompted another thought. It has been generally believed that the Pace



version was the only RS232 which actually used Amstrad's specified serial port addresses and, therefore, the only one to work happily in CPM with such comms programs as the very popular MEX. I figured the chances were great that the HS-S1 would also use the specified addresses so I set it up to run Mex. No problem. I was straight into Micronet without so much as a "wot, no Pace?" message appearing on my screen. So, while the others 'in the know' are weeping and



**The HS-SI Dual Channel Series Card.**

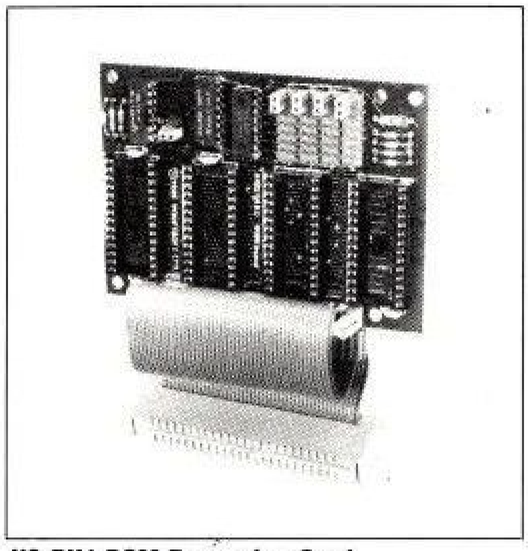
wailing over the loss of the Pace device, I am busy writing a program to flash "who's a clever boy then?" all over my screen. Gordon Bates, eat yer heart out!

There are differences between the two though. Some favour one and some the other. Not least of these is the price. The Pace version costs around the £55 mark while the Cirkit variety costs £34.44 *but* Pace's has its software built in whereas Cirkit's software is £6.60 extra on tape and £10.81 extra on disc or ROM. The ROM version would also need a Romboard. As I have already said, the software is very similar but there is an important difference. Both make use of bar commands allowing the user to write his own comms software for whatever purpose. For instance, the command :CWRITE <string> will send a string of date to the RS232 port and out down the telephone line if connected. :CREAD will read a string from the port. With these and other commands, comms programs can be written in Basic. But as well as this, both viewdata and scrolling software, which gives the instant ability to access bulletin boards, Micronet, Microlink, etc., is integrated into Pace's Commstar software whereas Cirkit's software has no such facilities. The closest it gets is with the :TERMINAL command which, when used after :OPENing a serial channel, does allow the computer to go straight on-line. However, it is somewhat basic and has none of the built-in facilities such as printing the screen, saving the buffer offered by Commstar and other comms programs. For serious ready made comms software we need to look to other programs.

That seems to make the Cirkit device look like the poor relation, doesn't it? But it isn't. Consider this. Pace's interface is sold complete with Commstar whether you like it or not and a great many comms users don't like it. They use Mex or the Cage ROM for preference. The Cage ROM costs around £30 but Mex is Public Domain and virtually free. Now we can see Cirkit's device as an RS232 which uses the correct serial addresses and for which we can get free software. We don't *have* to buy software that we might not want. If we do want to experiment and write our own, then the ready made bar commands software is available and at a very good price.

Another difference between them is that Cirkit's has two serial channels which can be used simultaneously while Pace's has only one. The second Cirkit channel consists of just two lines – transmitted data and received data so hardware handshaking isn't possible. Most of us would probably only use one channel but the second one is there if needed. Because of its legal addresses, it does look as if the HS-S1 will step into the hole about to be left by Pace.

Known to most of us as a romboard, the HS-RX1 Rom Expansion Card is just one of the half dozen or so boards



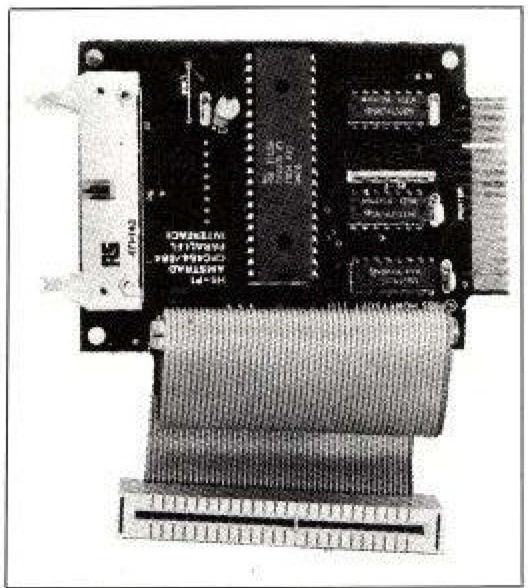
**HS-RX1 ROM Expansion Card.**

available for the CPC and, like each of the others, it has its own merits, not least of which is its size. Measuring about 4" x 3", it can hold up to four standard ROMS such as Protext, Utopia, DOS ROM for megadrives and of course the ROM version of the RS232C software. With such ROMs connected, the programs they contain are instantly available at the press of a few keys and take virtually no time to load. The 464 can have up to 7 ROMS attached, including the disc drive ROM, and the 6128 can have 15. The HS-RX1 has a link which allows the user to set it for the bottom half (ROMs 0 to 7) or the top half (8 to 15) and, within those halves, each ROM can be set to any number.

I think we are all pretty familiar with ROMS so there's not a lot more to say about the board *except this*. For its four socket size its £22.94 price tag fits in quite reasonably with its competitors but, and it's a big but, if it is bought together with one of the two other add-ons, then *it can be bought at half price* ) £11.47. Now that's not bad, is it? Remember, you heard it here first.

I've saved the HS-P1 Parallel and Centronics Card until the last because I find it the most interesting of all three. Possibly the most significant thing about it, as far as most CPC users are concerned, is that it is an 8-bit printer port. That's not all it does but I'll come to the rest a little later. Remember the 8-bit printer port project we did a few months ago which allowed us to access the 'high' graphic character sets in our printers? This card does the same thing. Unlike ours though, it doesn't use the same printer port address and it attaches to the computer's expansion socket, not the printer socket. These two facts are significant because it means that two printers can be connected at the same time and each can be selected by a single command. Those who can afford it can have a dot matrix and a daisywheel printer fitted together and choose which one to send the printer output to. You could, in fact, have three printers connected but that's going a bit far, isn't it?

The HS-P1 is a dual 8-bit parallel card and as well as the edge connector for the printer it has a 26 way IDC connector for other general purpose in/out work. Both ports have full handshaking available and can have each bit configured as input or output. Hence, up to 16 different external devices can be controlled through them. The instruction book provided contains several application suggestions including the control of a turtle.



**HS-P1 Parallel and Centronics Card.**

Like the RS232, the software is optional and can be bought on tape, disc or ROM. Also like the RS232 it is in the form of bar commands which are simple to use from Basic. Some of them are – put, get, write and read. The :PIO.PRINT,(n) is perhaps the most useful as it allows printer selection, a choice of 7 or 8-bit mode and the type of handshaking. For instance :PIO.PRINT,2 will cause all printer output to be 8-bit, BUSY handshaking only and directed to the HS-P1 port. And that will continue until a computer reset or until another such command is issued. If the 2 had been a 1 then the output would go to the CPC's normal 7-bit printer socket. For general in/put applications the commands are extremely useful and likewise for 8-bit printer use. But the software isn't essential. The book does supply technical information including the I/O addresses used and a simple bit of machine code, rather like the program that ran our own 8-bit port, is all that is needed to intercept and redirect printer output. Watch this column in the very near future for a program to run the 8-bit port. After that, as they say, yer on yer own. Pin-outs of both port are also given so the technically minded among us would have no difficulty in making full use of the 'control' aspects of the card.

At £22.94 the HS-P1 is an excellent buy if you have more than one printer or if you want to control external devices from the computer. The software is extra – £4.44 on tape, £8.74 on disc or ROM. But let's not forget KDS' 8-bit port which includes its type-in software at around £19. It's a case of horses for courses really. The KDS device will only ever be an 8-bit, printer port and, if that's all you need, then it's the one for you. If you aspire to other things then the Cirkit card doesn't cost too much more.

All three cards are made to the same 4" x 3" size and all connect to the computer's expansion port (disc drive port on the 464) via a short length of cable. They each have a through edge connector so that other peripherals can be added and they are sold uncased. This last point needs a mention. When connected to the computer, the boards lie flat on the desk with their pin sides down. If your computer is moved frequently then your desk could become slightly scratched as the boards slide across it. This is easily overcome by fitting some little stick-on-feet to the undersides. Cirkit can supply them at 48p for 8 – stock number 21–10030. Alternatively, the boards have a good sized hole in each corner and many methods can be found of using them to prevent the pins resting on the desk.

**DETAILS BOX**

| Software Product | Stock No. | | Price Tape | Disc | ROM |
|---|---|---|---|---|---|
| HS-S1 Dual Channel Serial Card | 41–03205 | 34.44 | 6.60 | 10.81 | 10.81 |
| HS-P1 Parallel & Centronics Card | 41–03201 | 22.94 | 4.44 | 8.74 | 8.74 |
| HS-RX1 Rom Expansion Card | 41–03200 | 22.94 | — | — | — |

Cirkit Distribution Ltd, Park Lane, Broxbourne, Herts EN10 7NQ. Tel. orders (0992) 444111, enquiries (0992) 441306.

# BrunWord

## Complete Word Processing Package £30

**BrunWord 6128 is a complete word processing package consisting of three programmes, a word processor, a spelling checker and a card filing programme. It is written to run on a standard unexpanded CPC6128 (or CPC464 + disc + 64K) and is optimised for use with a single disc drive. The latest version was released in October 1988 and out performs any other word processor for the CPC6128.**

The integrated spelling checker of BrunWord 6128 and its 30,000 word dictionary load at the same time as the main programme. We invented a special system to compact the dictionary so much that each word is represented by just one and a half characters. With such a compact dictionary, we are able to store this in the 64K of banked memory, making access very convenient and exceptionally fast.

Our closest rival claimed that their spelling checker achieves 'up to 2000 words per minute'. Our tests, published at the October 88 Amstrad show, revealed that its average speed for a file of 3366 words was only 526 words per minute and much more to our surprise, that it required eight changes of the disc to complete the spelling test. Our spelling checker achieved 3883 words per minute for exactly the same test (7 times faster!) and needed no disc in the drive. Remember that all other word processors need to load the dictionary from disc during the spelling test, even the so called ROM versions.

BrunWord has a 40 page manual which has several detailed examples, starting with step by step instructions to produce and print a simple letter. But your very first step is to load the TUTOR file into BrunWord. This takes even the complete novice straight into word processing and demonstrates the powerful editing and formatting features of BrunWord. There are also examples of printer control, showing how to create headings, to underline or to emphasise, and five deliberate spelling errors for you to correct. The tutor takes about 20 minutes to run through and after that you will feel confident to type in your own text.

### BrunWord Features

*40, 80 or 128 column display. *Touch typing speed over 200 words/min. *True insert or overwrite. *Justify or unjustify paragraph or whole text. *Justified text has balanced appearance. *Instant word wrap. *Block save, move, copy, insert and delete. *Local editing with word delete/undelete. *Adjustable margins and TABs. *Column/Line/Page display with file name. *True word count. *Find and replace. *Help menus. *Memory filing system. *Single character embedded printer commands (18 with 3 printer codes and 21 with 10 printer codes). *Page throw markers. *Multiple copies. *Odd/even page headers/footers with page numbers. *Multi file printing (new page or continuous). *Print specified pages. *Works with any printer. *True display superscript and subscript numbers. *User defined print characters. *Load ASCII files from other word processors. *Save ASCII files for other word processors. *Files can be encrypted. *Maximum file size about 9 pages of text.

### BrunSpell Features

*Memory resident with word processor. *Checks 4,000 words/min. *30,000 word dictionary. *No American spellings. *Add up to 5,000 of your own words. *Instant lookup. *Helps to find correct spelling. *Automatic correction.

### DataFile Features

*Alphabetical, numerical, date sorting on any field. *User defined headings. *Search routine. *Data merging into BrunWord. *Label printing.

## BrunWord ROM

We are often asked if we have a ROM version of BrunWord. The fact is we put BrunWord on ROM two years ago and even started the work to put the spelling checker AND the dictionary on ROM. The idea was to offer to update our customers' ROMs to include their own words. (How else would it be possible unless we cheat and put the dictionary on disc?). BrunWord 6128 with its spelling checker, 30,000 word dictionary and card filing programme needed 6 ROMs and would sell for considerably more than the disc version...... Let's just say that the idea is not completely dead.

## Info-Script £50

Info-Script is a complete data processing package and includes all the features of the BrunWord 6128 package. The database uses many of the internal routines of the word processor, making a very compact combination and allowing both programmes, 6 pages of text and 1000 names and addresses to be in the memory at the same time, using an unexpanded CPC6128. The great advantage of this is the speed and convenience of being able to access both programmes and their related data without any disc delays. Add to this the progressive search routines, the unique four marker system and the arithmetical functions and you will begin to understand the excitement of our customers.

### Database Features

*Very fast (e.g. takes 1 second to search 2000 addresses for surname 'Smith', initial 'B'). *Specific field search and/or progressive general search. *Instant sort on any field, alphabetical, numerical, date or reverse order (takes no time as the data does not move). *3 sets of user defined headings for each file. *4 markers for instant selection, plus one temporary marker. *Markers can be cleared or inverted and any pair can be added (allows complex searches to be quickly and easily performed). *No setting up of field type or length. *Efficient storage. *Relational records, Parents, Sons and Daughters. *Simple field to field arithmetic with running total. *Direct data merging into BrunWord. *Easy direct label printing, 1 across, 2 across, left of 2 or right of 2. *Single or multi-step.

### Data Merging Features

*Simple intelligent system, &N &A &D construct full name, full address and date. *&1 &2 etc specify individual fields. *Insert or fixed format merging. *Automatic justify after merging. *Single step (see before printing) or multi-step. *Stop any time, go to word processor, restart same place. *Merge data from several records for summary, invoice, purchase order etc. *Simple arithmetic. *Running total. *Running VAT total. *Conditional loading. *Conditional printing. *Repeat patterns.

## Upgrade £32.50

Send your BrunWord instruction manual (and one of your BrunWord discs if you have purchased a backup copy) and a cheque for £32.50. We will send you the Info-Script manual and one new Info-Script disc. Then send your BrunWord disc for us to update as your backup copy (cost included).

## BrunWord Elite £90

Vic Barnes, of Shepherds Bush, London, is a photographic journalist. He earns his living from the typewriter, or to be strictly accurate, from his CPC6128 + Star LC24-10. His work can be seen in various magazines including a recent article, with his own stunning photographs, about touring Scotland on his BMW motorcycle. He also regularly writes two Newsletters.

Prior to December 1989 he was a dedicated Protext ROM user and had said that he could not imagine ever wanting to change his word processor. Quite typically, it was soon after saying that that he noticed our BrunWord Elite advertisement. He gave us a long and detailed grilling over the telephone and promptly sent us an order. His order has the distinction of being the very first BrunWord Elite order in our order book. It was dispatched to him on 21st November 1989.

On December 10th he wrote:- "I've spent quite a few hours thrashing your quite brilliant programme, which so far has proved completely bug free. I have enclosed copies of the first two Newsletters created with it... I am now eager to produce more complex layouts. BrunSpell is amazing, no - turbo-charged! The 'look-up' feature has proved to be instantaneous. Info-Script seems very comprehensive but I still have a lot to learn... ".

We have had several telephones calls from him since, and happily he is still just as impressed. On Friday 5th January, he rang with a query about footers and without being prompted said "I haven't used Protext since I received BrunWord Elite". What more can we say?

(We asked permission to use his name & address).

## 100 Letters £15

This is a utility for use with Info-Script, enabling pre-written letters to be easily selected and personalised. It is supplied with a library of over 50 letters.

## Free Booklet

We have written a 16 page booklet which explains all about our programmes, starting with BrunWord 6128 and going on to Info-Script and BrunWord Elite. It is free to all CPC owners. Simply write your name and address in block capitals on a sheet of paper and send in a envelope to 'BrunWord & Printer', Brunning Software, at the address below.

## Letters

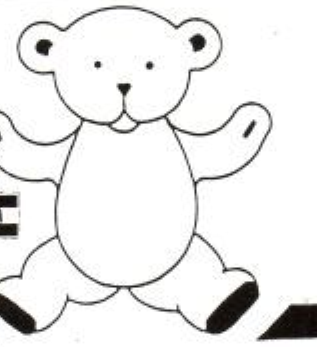
Regretfully I have recently upgraded my computer system to a 'PC' and I have sold my Amstrad CPC664. I therefore can no longer use your excellent software. I found BrunWord a powerful and easy to use programme from which many of the ungainly 'PC' word processors could learn a great deal. Many thanks for your hard work and good luck with your future products.
Mr M (Camberley).

Find enclosed my second disc for updating to BrunWord Elite. The reason for writing is to say how much I appreciate your product. I have used Info-Script and BrunWord for years now and find it so easy to use. I don't think you have noticed that there are a couple of spelling mistakes in your Fonts & Examples disc... try BrunSpell its an excellent spelling checker. (Thanks we take the point!). Thank you for keeping me up to date with your products they really are excellent, keep up the good work.
Mr W (Tipton).

Your BrunWord is certainly very good. My wife suggested that I might need a better computer than my Amstrad CPC6128. My reply is that this would mean accepting an inferior word processor.
Rev H (Wigan).

Send cheque/PO/Access number/Visa number to:

**Brunning Software**
34 Helston Road,
Chelmsford, Essex, CM1 5JF
Telephone (0245) 252854 (24 Hours)



BrunWord 6128 with BrunSpell & DataFile. . . £30.00
BrunWord 464 with BrunSpell & DataFile. . . £30.00
BrunWord Elite 6128, Info-Script & BrunSpell. . £90.00
Info-Script 6128 with BrunWord & BrunSpell. . £50.00
100 Letters.(needs Info-Script). . . . . . . . . . £15.00
BrunWord Elite and Info-Script include backup disc.
(All supplied on 3in Disc - state which computer)

All prices are inclusive for UK. Overseas orders sent insured air mail - Europe add £2.50 : Rest add £7.50

# BrunWord Elite

## The Inside Story

**Opposite this page you will see our standard advertisement. 'Standard' not being quite the right word as we regularly change the content and that is the story of BrunWord Elite. We use a CPC6128, with Info-Script, to run all our business activities, from writing letters to keeping track of who has what.**

In the early days our advertisements were laid out by the host magazine and it took a considerable effort on both sides to achieve an acceptable result. Everyone has their own idea of what constitutes a good ascetic appearance and no one has the same extreme interest as the person originating the idea.....

At that time the only programmes available to tackle this task on the CPC6128, were desk top publishers. These are painfully slow for a busy business environment and the quality of the final printout is way below what we would choose to use. The temptation to use a larger, much more expensive computer, was kept at bay and the frustration caused by the problem generated the ideas for BrunWord Elite.

You can follow the development of the programme by comparing our advertisements in ACU over the year from early 1989 to the release in November. But what you will not see is the development of the ease of use of the programme. Consider that it was producing our advertisements for some 9 months before we believed that it was highly enough developed to let it loose.

The reward for such a slow and painful path is bought out in the letter that we received from Vick Barnes. That was indeed a very welcome letter.

### Includes Info-Script

From the beginning we imagined that only the 'Elite' CPC user would be interested in our new BrunWord and that only the best was required. Following this idea we decided that all data merging activities of BrunWord Elite should be handled by Info-Script and that all printing operations should be optimised for a 24 pin printer. That's not to say it won't work with a 9 pin, as you can still do some quite remarkable layouts, but any 24 pin will be more flexible and produce much sharper results.

### The Weak Link

In a Hi Fi system the enthusiast will know that the interface to the ear is the weak link. In simple terms that means the loud speaker, and it is quite common for the speakers to be the most expensive item. It is a little less obvious in 'page making' that the weak link is the interface to the paper, or in simple terms, the printer. Putting it a different way, if you use a simple 9 pin printer such as a DMP2000 and you buy a £2000 computer to drive it, the actual printed text will be no different from what can be printed using your CPC6128.

You will now understand why we chose for BrunWord Elite to be at its best with a 24 pin printer. It actually makes good sense, with page making, to spend as much on the printer as on the computer itself. So, if you are thinking of buying a larger more exciting computer, it may well be better for you to spend the money on a better printer instead (and, of course, BrunWord Elite!).

### Why No One Else?

Most modern programmers use a high level language to develop programmes. This system is centred around the use of pre-written generalised routines and is a fast easy way of writing complex utilities. It has the terrific advantage over direct assembly programming, of easily being transferred from one machine to another. The penalty is that the programmes need more memory and run relatively slowly, which is usually compensated for by running the programme on a bigger, faster computer.

All our programmes are written in assembly language and each routine is re-written several times until the smallest, fastest form is found. This is painfully laborious. At least half the time spent in the development of BrunWord Elite was 'wasted' just optimising routines to take less memory.

Just think about it. Our closest competitor's word processor, when loaded with its spelling checker, has memory left for just 10,579 characters of text, and the spelling checkers dictionary is not in the memory. With BrunWord 6128 the spelling checker and the dictionary are always loaded, yet there is still room for 24,067 characters of text. So, our basic word processor has more than twice the memory available for text even though it has a memory resident dictionary.

If that sounds good then think on this. BrunWord Elite has all the features of BrunWord 6128. Insert the BrunWord Elite disc, type RUN "BRUNWORD" and the word processor, the spelling checker and the 30,00 word dictionary are all loaded into the memory just the same as BrunWord 6128. The text space is 23,007 characters, about 1000 less than BrunWord 6128. Now read about the extra features of BrunWord Elite, all of which are accessed directly in the memory:-

### Columns

BrunWord 6128 has a set of single character printer control codes for accessing all the common printer facilities such as underline and emphasised. BrunWord Elite also has these control codes but it also has a system that we call INCODEs which are designed to inform the programme HOW to control the printer rather than sending a specific set of codes. The idea being to let the programme control the printer within the guide-lines that you set.

To use these INCODEs it is not necessary to understand the detail of how the printer is controlled, so what could be a complex control sequence becomes a very simple instruction.

For example, the simplest 9 pin printer will print in two column by typing >C2 0 40 anywhere in the text. That is the INCODE character followed by C for Columns, 2 for the number of columns (up to 6) and then a list of the left margins of the columns. Reverse the margin numbers and the columns will be reversed. Make the left margins the same and the columns will be printed on top of each other. Silly you may think, but not so. By printing two columns in the same place you can achieve a complex overlay structure. You could in fact print 6 separate overlays all in the same place. Example 3 on the Fonts & Examples disc uses this technique to show how any 9 pin printer, with Epson & IBM codes, can print in two columns AND have a box drawn right round the outside of the page, all in a single printing operation.

### Set To

9 pin printers such as the Star LC10, which have reverse line feed, can also make use of the 'Set To' INCODE. This moves the print head to an exact distance down the page and the user does not need to know if this is above or below the current position. This can be used with the margin INCODE and line spacing INCODE to create a very complex page layout.

### Justification

24 pin printers and some 9 pin printers are able to justify text. This has the tremendous advantage of allowing proportionally spaced lettering to be correctly justified. If we use an unintelligent approach and simply turn the printer's justification ON, then all lines longer than 75% of the column width would be justified and all lines shorter than this would be left unjustified. This is an over simplified answer to the problem and would often cause the last line of a paragraph to be justified when obviously it should not be. BrunWord Elite can be instructed to turn on justification 'when appropriate' and in this case the last lines and any tabulated text will not be justified.

Even that is not the limit, as BrunWord Elite can also be instructed to fill the line according to the true widths of the proportional characters. This gives the very best appearance, particularly when narrow columns are used.

### Printer Status

The 8 bit printer status port supplied with BrunWord Elite enables the programme to interrogate the printer. Printer OFF, No Paper, OFF Line, Printer ON are the message displayed dynamically. If you want to stop the printing, just turn the printer OFF and the programme automatically returns to the editor, even if it was in the middle of downloading a font or sending bit image data.

### Who Needs It?

BrunWord Elite is written for the perfectionist. At its heart is the full BrunWord 6128 programme with its spelling checker and 30,000 word dictionary, and for data merging the full Info-Script programme is included. So for the price of £90 you get BrunWord Elite, BrunWord 6128, BrunSpell, Info-Script and a printer lead with 8 bit printer status port. There are three discs in the package, two identical programme discs (one for backup) and a Fonts & Examples disc containing example files and seven 'type setting' fonts for use with 24 pin printers.

### 24 for 9

Finally, we have a utility under development to go with BrunWord Elite that will enable any 9 pin printer to create large headings using the high quality 24 pin fonts - isn't that amazing!

# What is a digitiser?

## Nick Hutton, ACU's new technical maestro, has knocked together a machine code sound digitiser program for your enjoyment.

You may have been playing *Chase HQ* recently. If you have, you will have noticed that the program includes some rather interesting speech and spot effects that have been lifted straight from the coin-op. These effects were generated by recording real sound into the computer's memory and then playing it back through the internal speaker, the technical term for this process being digitising. An analogue sound on cassette is recorded into the computer, or sampled (muscianspeak); it is then converted into digital information that the computer can easily manipulate.

Any sound can be sampled in and then toyed with while it is in the computer's memory. It can be played backwards, for example, speeded up, or slowed down. Music today uses this technique extensively to generate a variety of strange sounds and effects, for example Jive Bunny.

The Atari ST and Amiga have a large amount of samplers at their disposal but we Amstrad users are not so well supplied. I only know of one sampler commercially available, *First Bytes Digitizer* on side two of their *Micro Music Creator Disc*. So last year I set out to solve the sampler shortage and the following program was the result.

The program consists of two parts: the first is a short piece of machine code which sets up two RSXs for the recording and playback of sound; the second and more comprehensible part is an RSX driver which is so good that it is almost user-friendly. This menu system will allow you to get the maximum from the sampler with the minimum of technical knowledge. For each of the options selected a number of parameters must be specified in answer to the menu's questions.

For example if you wanted to sample a sound, select option 1. You will then be asked questions about the sampling operation you wish to perform: "Start Location? – The location in memory at which you wish to store the sample." and "End Location? – The location in memory at which you wish the sample to end."

These two parameters define the amount of data to be recorded in the computer's memory and subsequently the length of the sample: "Recording Speed? – The speed at which your sample is to be stored. The higher the number, the faster the sound during playback."

Once these parameters have been set, just follow the screen instructions to record your sound. Please note: the recording of the sound will only commence after the space bar has been pressed. It does not begin as soon as the cassette motor starts up. Once your sample is recorded, you will be referred back to the main menu.

To play back your masterpiece, select option 2. The first questions you will be asked have already been covered, so I shall move onto question 3.

This question allows you to specify the volume level at which your sample is to be played back. Any number between 0 and 15, 15 being the loudest.

When entering the parameters for the Start and End location of your sample, be careful not to exceed the area defined in the box below. If you do exceed the 'safe area' your machine may crash.

If you have trouble remembering the start and end locations of your sample, I suggest you write them down because you will need to know them if you want to load or save a sample to disc or tape. The maximum length for a sample is about 34K.

Apart from loading, saving, playing and recording sounds there is also an option to quit the program. Beware this option as it will reset your machine and any data present in memory will be lost.

Feel free to use parts of the machine code routine in your own programs to play back your sample; a little digitised speech or music adds a touch of class to any program no matter how simple.

I have included a command summary for quick reference and also a techno box for those who wish to use these routines in their own programs. You will notice that the samples are far from crystal clear. This is a limitation of the CPC and its sampling rate, and not a fault of my program. Have fun!

```
10 DATA 01,0A,A0,21,1B,A0,CD,D1
20 DATA BC,C9,1F,A0,C3,31,A0,C3
30 DATA 31,A0,C3,97,A0,C3,97,A0
40 DATA C3,7D,A1,00,00,00,00,D2
50 DATA 52,45,43,4F,52,C4,50,53
60 DATA 4F,55,4E,C4,D0,4E,43,CD
70 DATA 00,ED,73,84,91,FE,03,C2
80 DATA 4C,A0,DD,7E,00,FE,00,CA
90 DATA D7,A0,32,0F,A1,DD,23,DD
100 DATA 23,C3,56,A0,FE,02,C2,D7
110 DATA A0,3E,0D,32,0F,A1,DD,5E
120 DATA 00,DD,56,01,DD,6E,02,DD
130 DATA 66,03,E5,CD,6E,BC,21,CB
140 DATA A1,CD,DE,A0,3E,42,CD,1E
150 DATA BB,C2,C7,A0,3E,2F,CD,1E
160 DATA BB,C2,7F,A0,C3,6C,A0,21
170 DATA 9D,A1,CD,DE,A0,D5,CD,A7
180 DATA BC,D1,E1,CD,E9,A0,3E,07
190 DATA CD,5A,BB,CD,71,BC,C9,ED
200 DATA 73,84,A1,FE,03,20,0E,DD
210 DATA 7E,00,E6,0F,32,51,A1,DD
220 DATA 23,DD,23,18,0A,FE,02,C2
230 DATA D7,A0,3E,0F,32,51,A1,DD
240 DATA 5E,00,DD,56,01,DD,6E,02
250 DATA DD,66,03,CD,14,A1,C9,3E
```

```
260 DATA 0A,CD,5A,BB,CD,5A,BB,CD
270 DATA 71,BC,ED,7B,84,A1,C9,21
280 DATA 86,A1,CD,DE,A0,C9,7E,FE
290 DATA 00,C8,CD,5A,BB,23,C3,DE
300 DATA A0,F3,E5,DD,E1,06,08,AF
310 DATA CD,05,A1,CD,0E,A1,17,10
320 DATA F7,DD,77,00,DD,23,1B,7A
330 DATA B3,20,EA,FB,C9,C5,06,F5
340 DATA ED,60,CB,14,C1,C9,26,0D
350 DATA 25,20,FD,C9,E5,D5,CD,33
360 DATA A1,D1,E1,06,08,CB,06,C5
370 DATA DC,4D,A1,D4,57,A1,C1,10
380 DATA F4,23,1B,7A,B3,20,EC,CD
390 DATA A7,BC,C9,CD,A7,BC,F3,3E
400 DATA 03,0E,00,CD,61,A1,3E,07
410 DATA 0E,3D,CD,61,A1,3E,02,0E
420 DATA 00,CD,61,A1,C9,F5,3E,09
430 DATA 0E,0F,CD,61,A1,F1,C9,F5
440 DATA 3E,09,0E,00,CD,61,A1,F1
450 DATA C9,F5,3E,C0,06,F6,ED,79
460 DATA 06,F4,F1,ED,79,06,F6,3E
470 DATA 80,ED,79,06,F4,ED,49,06
480 DATA F6,AF,ED,79,C9,21,F6,A1
490 DATA CD,DE,A0,C9,00,00,07,0A
500 DATA 0D,49,4E,50,55,54,20,20
510 DATA 20,20,20,45,52,52,4F,52
520 DATA 07,0A,0A,0D,00,07,18,2A
530 DATA 2A,2A,2A,2A,2A,2A,2A,2A
540 DATA 2A,2A,20,20,53,41,4D,50
550 DATA 4C,49,4E,47,20,53,4F,55
560 DATA 4E,44,20,20,2A,2A,2A,2A
570 DATA 2A,2A,2A,2A,2A,2A,18,0D
580 DATA 0A,0A,00,07,0D,0A,50,52
590 DATA 45,53,53,20,54,48,45,20
600 DATA 53,50,41,43,45,20,42,41
610 DATA 52,20,54,4F,20,53,54,41
620 DATA 52,54,20,53,41,4D,50,4C
630 DATA 49,4E,47,20,0D,00,07,0D
640 DATA 0A,0A,A4,20,4E,43,48,20
650 DATA 31,39,38,39,0D,0A,0A,07
660 DATA 00,00,00,00,00,00,00,00
670 DATA end
680 add=&A000
690 READ a$:IF a$="end" THEN 720
700 POKE add,VAL("&"+a$):add=add+1
710 GOTO 690
720 CALL &A000
730 CLS:MODE 2
740 PAPER 3:CLS:INK 0,0:INK 1,26:
    INK 2,0:INK 3,26:BORDER 26:PEN 0
750 PRINT TAB(16);"Sound Lab"
760 PRINT
770 PRINT TAB(7);"  Created by Nick Hutton"
780 WINDOW #1,9,29,5,11:PAPER#1,2:CLS#1:
790 WINDOW #2,10,30,6,12:PAPER#2, 0:CLS#2:
800 PRINT #2,"1..Record a sample"
810 PRINT #2,"2..Play a sample"
820 PRINT #2,"3..SAVE a sample"
830 PRINT #2,"4..LOAD a sample"
840 PRINT #2,"5..Abort System"
850 WINDOW SWAP 0,3
860 CLEAR:LOCATE 10,15
870 PEN 0:PAPER 1:INPUT "Enter
    option (1-5)";opt%
880 PAPER 0
890 INK 0,0:INK 1,26:PAPER 1:PEN 0
    :ON opt% GOSUB 910,990,1040,
    1100,1170
900 IF opt%>=1 OR opt%<=5 THEN
    GOTO 900
910 INPUT"Start address.....? ",s
920 INPUT"End address.......? ",e
930 INPUT"Recording Speed...? ",r
940 MEMORY s-1
950 BORDER 6
960 |RECORD,s,e,r
970 BORDER 26
980 GOTO 730
990 INPUT"Start address.....? ",s
1000 INPUT"End address.......? ",e
1010 INPUT"Volume............? ",v
1020 |PSOUND,s,e,v
1030 GOTO 730
1040 INPUT"Start address.....? ",s
1050 INPUT"End adress........? ",e
1060 PRINT"Ready to SAVE !"
1070 CALL &BB18
1080 SAVE "SOUND.BIN",b,s,e
1090 GOTO 730
1100 INPUT"Start address.....? ",s
1110 INPUT"End address.......? ",e
1120 MEMORY s-1
1130 PRINT "Ready TO LOAD !"
1140 CALL &BB18
1150 LOAD"sound.bin",s
1160 GOTO 730
1170 CALL &BB18:|BASIC
```

COMMAND SUMMARY

:Record,Start address,End address,Speed
:PSound,Start address,End address,Volume

Speed is a number between 0 and 255.
14 is about the speed of normal sound.
Volume is a number between 0 and 15.

WARNING: It is unwise to exceed the memory area between &2000 and &8500 for recording samples as your machine may crash or the digitiser program may be corrupted.

TECHNOBOX

| | |
|---|---|
| Location of RSX code | &A000 or 40960 |
| Length of RSX code | &208 or 520 |
| End address of RSX code | &A208 or 41480 |
| Useable memory start | &2000 or 8192 |
| Useable memory finish | &8500 or 34048 |

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| Myth | 6.99 | 10.99 |
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# Educating with the Arnold

## Former teacher David Dorn takes time from Applications Advice to bring you the first of a three-part investigation of education using the Amstrad CPC.

In the CPC series of machines, Amstrad has produced a range of computers that might have been purpose designed for educational use. What has never ceased to amaze me is that more schools haven't take up the Amstrad option as opposed to the Acorn/BBC machines that are so prevalent. The Beeb only has history on its side (and an absolute wealth of software, of course!).

However, the humble Arnold is pretty well served for educational software, and rightly so since its facilities are pretty good. Consider for instance the graphics capabilities of the machine. In either Mode 0 or Mode 1, a medium to high resolution (in relative terms) colour screen can attract and hold a child's attention very well. The CPCs have a reasonable sound chip built in that allows for some clever programming and far from poor sounds.

But of perhaps more use than either of these is the 6128's built in disc drive. In educational terms, having to wait for ages while a tape loads is de-motivational, whilst the much faster loading speeds of the disc drive do a lot to make the prospect of using a program more exciting.

The question that must be answered next concerns the design of good quality educational software, and as part of that a definition of what exactly constitutes educational software.

My own definition of what constitutes edsoft is very broad. Generally any software that helps, allows or encourages the process of learning falls into my definition. Therefore word processors are educational, in the broadest sense, as are database programs, and spreadsheets. DTP software falls into the same category as do certain kinds of comms software. However, the generally accepted definition would only include software that carries the word 'education' on its label – compilations like *Fun School* and *Fun School 2* from Database, individual programs like *Timeman* from BES, and so on.

These are all programs that have been purpose written for educational use, and therefore fall into the narrow 'educational' definition. This three-part overview is intended to give the parents and teachers who read this magazine an insight into what is available in the way of this latter category for the CPC range. In the second and third instalments I intend to name names and give potted reviews of representative packages from each of the software houses that have submitted their products for evaluation.



So, what makes 'good' educational software? To answer that, we need to look at how a child learns, and what motivates him/her to enter the learning process, with particular reference to the use of a computer.

Firstly, a child must be motivated to learn. That is an inescapable fact. Any computer based learning tool must, by extension of the logic, be motivational




per se. This suggests that for the younger user (say up to five years of age – pre-school) bright, colourful displays and attention grabbing music are the requirements. A child of this age has a short attention span, and so must not be presented with tasks that take too long to complete. S/he must also be rewarded for correctly completing a task, with something of an entertaining nature.

Thus, designers need to consider the best use of the machine in terms of graphics, sound, colour, and re-designed fonts. I think it is self evident that something colourful and tuneful will maintain interest longer than a bland, monochromatic, and generally uninteresting display coupled with monotonous bleeps every so often. One of the greatest motivators in educational software has to be the computer generated reward.

If a child gets a task or process correct, s/he ought to be rewarded with a colourful and animated graphic, which is sonically pleasing. On the other hand, a wrong answer, or incorrectly completed process should not reward the misdoer with colourful and pleasant images. This last bit takes some thinking about. Take a game of hangman for instance. Many kids, having played a computer version (and there are many), find an animated hanging complete with the death march in three-part harmony to be a fascinating sight. The alternative (getting the word right) is quite often just a message flashed onto the screen to say 'correct'. Given that the hanging scene has all the 'grab factors' – animation, colour, and sound – which way would YOU be motivated? Precisely! The child goes for the most

pleasing and animated option, which in this case is the wrong one! There is no motivation to get the word right – and thus begin the learn the spelling – as a random choice of letters will get the hanging scene nine times out of ten. These caveats are of importance to all ages of child – not just the younger user.

The next most important consideration must be the flexibility of a program. Parents and teachers may need to tailor a program to suit a particular child. The ideal situation is known as 'content free'. In other words the supervising user has what amounts to a shell into which specifically tailored information can be inserted to suit a child or group of children. For home use this can lead to the program not being used, which is not a satisfactory situation, so many of the educational software houses walk the middle path. They provide software which has a content – spelling lists, place names – but which allows the supervising user to alter/edit/ replace it with content of their own choosing.

There are other areas of design and execution that are also of vital importance. Any documentation which accompanies an educational program must be fully checked for spelling, syntax and grammar. Too often I have seen plurals that have had an apostrophe added before the 's', or in one or two bad cases the world 'flies' spelt 'fly's'. At the same time, the language and vocabulary used in any documentation intended for the child to see ought to be couched in very simple, straightforward terms. I see little to be gained in a parent or teacher having to teach a child to read the instructions so that they can use a program!

In the software itself, navigating and using it really needs to be as intuitive as possible. For instance, the ESCAPE key should always have the escape function – it ought to be a panic button, that the user has access to when s/he thinks a mistake is about to be made, and wants to backtrack without causing havoc. Too often, I've seen the escape key used to confirm an action. That certainly isn't intuitive!

So, we've established that educational software needs to be motivational, be appropriately pitched to the abilities of the intended user, must make the best possible use of the computer, and ought to be at least as well designed graphically and sonically as an arcade game. This may seem a tall order, and one or two software houses that I've come across will doubtless disagree with me over some of the points, particularly pertaining to sound and graphics. OK, let me clarify my position on that point. As a child grows older, the use of sound and graphics becomes less important, until at the higher age and ability groups plain, silent, text based programs can be very satisfactory. However, the reward/raspberry notion still applies. Even at eighteen years of age, a child/ youth needs a reward for the completion of a successful task, as do we all.

To give you an idea of how I've gone about evaluating the software we've received, and the criteria on which it's been judged, the next few paragraphs may prove useful. A general word, though: there's no way that an evaluation of this kind can be likened to a games review, even if some of the criteria appear to be similar. For instance, whereas I might slam a game for having simple blocky graphics, they may be entirely appropriate in an educational package, and receive copious praise. It's very much horses for courses!

I'll quickly describe how I've looked at the range of software that's been presented for this round-up, and how it has been assessed.

I've enlisted the services of two children, both aged eight, but of very widely differing abilities, and allowed them to choose freely between all the programs we've featured, after an initial look at all of them. They each kept a record of which ones they've played with on any given day, and also marked them for usability, and enjoyment. I've also used the services of my old school, which now uses a dozen 6128s in its computer education department, to get a group of 36 kids of mixed ages and abilities, and very varying levels of motivation to spend some time using some of the packages. Their feedback has been most useful, and I'm indebted to the school for their time and co-operation.

In addition to this, I've gone through each one carefully, and marked it in the following categories:

1. Use of graphics. 2. Use of colour. 3. Use of sound. 4. Attention to detail (includes spellings, grammar and syntax). 5. Suitability for documented age range. 6. Reward vs raspberry (does the incorrect get a better response than the correct). 7. Instructions for child. 8. Instructions for parent/teacher. 9. Adaptability –if it can be altered to suit different children, how is this done, and is it intuitive and user friendly? 10. Onscreen help and directions. 11. Educational content.

These are in no particular order, but should give the prospective purchaser some idea as to how a child will approach the software, and whether or not the educational content is appropriate for the target age range. If the content is outside the target range, I'll indicate it and also suggest a range that it is suitable for.

Some of the software houses have a range of software that is based around a particular core, and has a variety of different content types that use this core. Kosmos exemplifies this, with their *Answerback* and *French Mistress* language series. In these cases, there will be a full evaluation of a representative package, and similar products from the same stable will be annotated alongside it.

What I won't do is to award a *Which*-style best buy status to any program or suite! In this field, that would be iniquitous, and anyway, this mini series of articles is designed more to let you know what is on the market, and what its best target audience is, than to perform a comparative review and evolve a league table. We'll leave that to lesser magazines!

So, in the next instalment, we'll take a look at programs aimed at the younger children – those aged below around the 11 to 12 mark, with abilities ranging from poor to bright. If you've come across any programs which you think are particularly good, or if you have any comments on educational software in any way, please drop me a line at the usual address, or on any of the electronic mail services I use.

Until next month, happy learning!

*● Among his many other accomplishments and attributes, David Dorn has 15 years of teaching experience to his name. Although devoted full-time to journalism since 1988, his teaching experience includes seven years of teaching children with special needs and some time in charge of his school's computer department – which exclusively used CPC 6128s!*

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# Spring is sprung

## David Dorn, replete with fresh hair, anticipates clement weather whilst answering more of your queries.



Ah! 'tis Spring again, when a young man's fancy turns to thoughts of love, and the Applications Advice mailbag comes flopping through the letterbox with a gentle whistle from the postie, instead of his usual grunt! At least it is as you read this – at the moment, it's chucking raindrops the size of golf balls at my office window, backed up by wind strong enough to get my neighbour's sailboard into orbit!

But enough of all this poetry and whimsy – down to the nitty gritty of your problems and their solutions. First, as usual, some post that refers back to previous letters. Tim Holyoake, of Peatling Magna in Leicestershire, clatters away at his keyboard and writes: 'Mr. G. Barker wrote to you in ACU March asking about headphones for the CPC. May I suggest the *Sound Blaster* system from Siren Software, which in spite of the name is a really good system. An amplifier plugs into the back of the CPC, and is connected to two three-sectioned speakers. There is a connector for a pair of personal stereo headphones, which come supplied.'

How very true! Simon Cobb, who runs Siren, was chatting to me only the other day at the All Formats Computer Fair, and told me the Sound Blaster is still selling like a hot cake. You may contact him on 061 228 1831. Cost is around the £35 mark – ear plugs are optional (I tend not to have the volume very high on either of my CPCs – I'm just an old fashioned kinda guy!). Thanks for the letter, Tim!

The next blast from the past is a real oldie, going back to pre DD days in this column. Allan Entwhistle writes: 'We readers have very long memories and although this may have left yours months ago, it certainly has not left mine . . .' hang on a minute, Allan, the name rings a bell – Home Finance Program was the proggy you were having trouble with wasn't it? Carry on: '. . . I refer of course to the letter I wrote to David Foster when the address of ACU was Brentwood – a copy of which is enclosed (dated 3rd Feb 89), which you referred to in June 89.

'Could I please ask, have you had any reaction from the readers regarding this program, for although I have kept a keen eye open in every copy of ACU since then, I have not seen any reference to it. Maybe I have missed it – I hope not.'

Allan, I have to say that the normally voluble readers have not come back on this one at all, and my own searches have been fruitless. So, another plea to the readership – do any of you own this program – the Home Finance Program, and if so, can you get in touch. Allan is almost ready to write off the cash he's spent on it and get something else in its stead (which, in all honesty, I think might be the best bet). The problem concerned the program's inability to accept more than 500 records – if any of you can overcome this, you know what to do!!

And now to up to date letters. Two readers, Mike Lyons (BA PGCE) and

Ian Bolden, have written with remarkably similar experiences of Rodos and Protext/Promerge+ on ROM. First, Mike's query: 'I have had the Protext and Rodos ROMs for some time now, and they have managed to get along quite well except for a few minor clashes.

'Now, the one thing I miss from Tasword is the mail-merge facility so I saved up my pennies and bought Promerge+ to fit into my Romboard and give me this wonderul facility (and a few other helpful commands). However, Rodos will not behave with Promerge. They can't stand the sight of each other and refuse to communicate.

'What I want to know is this – is there any way of making the two work in tandem, or, failing this, would Ramdos work with Promerge+, thus giving me the best of both worlds?

'It would also be helpful to know whether or not Ramdos would accept Rodos formatted discs and allow me to read and write them without too much hassle. This is especially important because I now have one disc with over 700k of letters, worksheets, exam notes and lesson plans etc (all of the usual paraphernalia of a working teacher) on it, and I would absolutely hate to have to put this all back onto 3″ disc. As it is I'm fiddling about making temporary copies on a 3″ disc, ZAPping Rodos out and then launching Promerge+ to do the printing on my Star LC24-10. All this loading, saving, re-loading is a real pain, so I'd be undyingly grateful for any help you could give.'

Before I move on to Ian's letter, let me cover the Rodos vs Ramdos/Romdos compatibility question. Ramdos/Romdos is as configurable as you could wish – there isn't a parameter on the XDPB (eXtended Disc Parameter Block) that you can't change, so you might think that you would be able to read Rodos formatted discs easily, just by changing a few values.

Up to a point, you'd be right, but it isn't that easy, I'm afraid. Rodos formats discs with what's known as a FAT (File Allocation Table) to take account of the sub-directories it allows. You may remember that these allow a structure similar to figure 1.

```
                     |--ACU
                     |
        |----Text----|--Letters
        |            |
        |            |--Lessons
        |
Root--
        |
        |
        |---others
```

**Fig. 1.**

where Text is a sub directory of Root, and contains three further sub-directories, each of which contains files – you'd access a file by calling it '/text/acu/problem.txt' and so on.

Now, Romdos/Ramdos has no facility for reading this kind of directory structure, so while it can conceivably be made to format the disc in the same physical way (same number of tracks, sectors, sides, and reserved areas), it will not understand the information on a Rodos formatted disc, and vice versa.

In this case, the remedy might lie in making 3″ backups of your big discs, and restoring them onto Ramdos/Rodos formatted discs – a once and for all process. However, do not despair – Ian Bolden may have the answer!

'I recently read again the review on the Rodos ROM in the June 89 edition of your magazine. In the review it stated that Rodos and Protext were incompatible. Also, over the past few months, there have been further statements about Rodos/Protext compatibility. Some say there is a problem, others not.

I have been using, for about a year, Rodos and Protext, and I have experienced incompatibility. Therefore, I have only been using Amsdos compatible discs when using Protext and using larger formatted Rodos discs for file storage.

For those who have not been experiencing problems, when files are saved to a Rodos formatted disc (800k) directly from Protext, they become corrupted in varying degrees of severity.

The solution, as I recently discovered, is simple. Rodos has to be in a ROM socket whose number is lower than Amsdos (7). Therefore Protext, in order to operate with Rodos, should be in a slot numbered lower than the one which is occupied by Rodos.'

I'll stop you there for a moment, Ian. First, the '7' slot is occupied by the CP/M ROM, not Amsdos, which lives in slot 0, and has to in order to operate. Your arrangement is fine for older versions of Rodos, but does not, I fear, work for the most recent releases. I have an old one, and the new one, and yes, what you suggest is fine with the old version, but not with the new one – corruption still occurs.

Ian continues: 'I have just purchased Promerge+ and Prospell. There is no problem with the latter. However, with Rodos operating with Protext and Promerge+, the print to screen/printer from disc commands do not work.

On using the commands, the screen becomes corrupt, and the computer locks up. If the same commands are used from an Amsdos disc with Rodos disabled, everything works fine. Has anyone else got this problem? Is there a cure?

'Compatibility problems do not end there, however. The auto disc boot does not work if Promerge+ is enabled.'

Hmm. All of these problems have been looked at by both Phil Craven, Trevor Cummings, and myself, and we can find no way round them. In fact, it's so much of a problem that I've given up with Rodos altogether, since, for reasons of compatibility with my other machines (PC, ST, Amiga) I use Protext on the CPC (otherwise I'd be using Brunword). I do use Romdos though, and have had no problems whatsoever with it, either with the full Arnor Proxxx suite, or without. It also supports CP/M, which, as I've said before, Rodos won't.

In the end, the choice is fairly simple. Rodos won't work happily or reliably with Arnor products and won't work under CP/M at all. Romdos/Ramdos works perfectly every time under both situations, but doesn't have the extended directory structure that Rodos offers. Since neither is standard, for the moment I'd go with Romdos. There is another possibility. Simon Cobb (who is getting his second mention in this column this month!) tells me that Siren is bringing out a program to allow you to read and write PC format discs on a 3½″ or 5¼″ drive.

By the time you read this, I expect it will be on the meat market. Obviously, I haven't had the chance to check it out yet – it isn't finished as I write – but it may be just the ticket. Simon is writing the software, and he's aware of

the popularity of the ROMs we've been discussing, so I presume he'll be writing with compatibility in mind – indeed, he gave me to understand as much when last we spoke.

It could well be worth while looking at that as an alternative. One way or another, as soon as he sends me a copy, I'll look at it and let you know how it fares alongside the two present contenders.

And now a plea for help – it's the printer problem time again, and I need your help, dear readers! Wilbert Goerge writes from Welsh Wales, Swansea to be precise. 'I have a Seikosha AP-80A which I bought in 1982 to use with an old Acorn Atom computer. The manual states that it is "parallel interface centronics type" with graphics capabilities. It employs an impact uni-hammer print method, with 5x7 dot matrix.

'I made no attempt at graphics printing with the Atom, but since buying my 6128 I have made many unsuccessful attempts. I feel there is some simple key I am missing. The manual indicates a code for graphics printing (9LP1), but gives no clue as to how to use it. Can you please help me?'

I have my Sherlock Holmes hat on here folks – let's look at the clues. First clue: the age of the machine. Epson standards were just in the infancy of their acceptance around this time (1982), and many printers then available had totally proprietary software interfaces (the escape codes used to set what features they had).

Second clue: the '9LP1' graphics command. This has to be preceded by an escape, I would think – ie CHR$(27) – before it can be brought into effect. Other possibilities would include CHR$(28) as a preamble to command sequences. However, these two most common codes take their rise from Epson and IBM standards. Since the printer is dated 1982, it's likely that the IBM codes are nearer, but it's by no means certain that we're even going to be close.

Well, even Holmes and Watson weren't infallible (and anyway, I couldn't find my deerstalker and pipe!), so I phoned Seikosha for some advice on this one. Dimitri Kuzie was the helpful chap on the other end of the line. We first of all spent some time trying to fathom out which printer it was you have, and came to the conclusion that, because of its date, and the information you'd given me, it was, in fact a GP-80A. The GP stands for Generic Printer. It has no emulations, either Epson or IBM, and its graphics capabilities are, to put it mildly, fairly obscure and hard to program.



Dimitri went on to say that each byte sent in a graphics mode has to have an escape sequence sent before it, and that to print a full screen dump, even assuming you had the time to write the dump software (which he reckoned would be a l-o-o-o-n-g thankless task), would very likely take the best part of a day!

The upshot of all of this is that your printer, I'm afraid, is unlikely ever to be able to interface to a commercial art package, and writing a driver for a Basic screen dump is unlikely to be very rewarding. Dimitri's suggestion was that you nip out smartish and buy a more up-to-date Seikosha printer (well, it would be, wouldn't it!?!). I'd go along with that – but don't necessarily tie yourself down to Seikosha – there's a wealth of choice out there!

And finally for this month, D.W. Waistell from Darlington in God's Country (only just – it's nearly in Yorkshire!) is having problems with his Datel (DKTronics) light pen and printer dumps. He uses a DMP2160 and a 464. He tells me that he's followed the instructions in the manual carefully – MEMORY 9999, and loading the second program on the tape. Then, he's saved the Amstrad printer example onto tape, and reloaded it. (I have no idea why!). Anyway, he's gone through the steps as he should, but only gets a mixture of symbols and lines on his printer.

The problem, I think, lies in the printer driver, and how the printer is set up. Datel tell me that the light pen software was written with the DMP2000 in mind – the precurser of the DMP2160. The latter has two modes of operation, I believe, being either Epson compatible, or IBM. I'd suggest that Mr. Waistell checks the dip switches on his printer, and sets it to Epson mode, and uses the Epson printer driver, rather than the Amstrad one. That should solve the problem once and for all. If it doesn't, I've no doubt that we'll be flooded with letters!

Speaking of which, keep 'em flooding in – the column can't survive without you. You can get to me at the address at the front of the magazine, or on Telecom Gold 74:MIK2050, Prestel MBC 914177811, or via Focal Point (01 828 1577) settings 8N1, private mail to either David Dorn or Sysop, public mail on the Applications Advice sub board. If you really want to be flash, try all four!

# Around in circles

## But seriously: Auntie John is back on the Machine Code business – and he means it.

Up until now every program we have written – and that's not very many to be honest – has been totally linear. By linear I don't mean in the same sense as one of those record decks with the pick-up arm that moves in a straight line instead of being attached to the corner and swinging in an arc.

I actually mean that imaginary 'flow of control' which seeps through the program and only goes in one direction – down. You could imagine it starting at the top of the listing and working its way down, instruction after instruction. All nice and simple. And deadly boring. If all programs were written this way, they would take up fifty billion times more memory to store them and be as predictable as Neighbours. Why? Well read on, gentle reader, and find out.

First, let's tackle the problem of achieving a type of GOTO instruction from machine code. Here we have to learn another bit of magic – the difference between relative and absolute. A certain physicist created quite a stir when he pronounced that nothing was absolute and everything was relative, depending on how fast you were going at the time. This was, of course, obviously complete nonsense. Or so the public thought at the time. It turned out that his theories explained some rather odd natural phenomena and gradually acceptance grew, until today the name of Eamon McPhitrick is known in at least two pubs in Kilkenny. (Professor McPhitrick is convinced that Albert Einstein stole the idea from him after attending his lecture on 'The Potato Soup Model of the Atom' in which he likened sub-atomic particles to vegetables.)



But back to the problem: relative and absolute. Think of a piece of squared paper. Now put a dot in any square. Looks nice, doesn't it? To refer to the position of this dot, we have two choices. We can decide on a fixed point of reference and give the dot a co-ordinate, such as four squares up and three squares right. This is how the normal graph system works, and its an absolute addressing technique. The other way is to stick your finger anywhere on the page and describe the location of the dot in terms of how far away it is from your finger: three squares down and two right. If you move your finger this relative address is useless, but at least it worked when your finger was in the right place. And if you remember where you placed your finger using an absolute system, you could always find the dot. Easy eh?. Now you should understand why computer programmers are all mad.

Essentially that's the difference between relative and absolute, and a Z80 assembler provides both types in a jump instruction. The absolute jump works like this:

```
  JP  2-byte-address  &c3 &nn &nn
eg JP &1234           &c3 &34 &12
```

The relative address looks like this:

```
  JR 1-byte-offset    &18 &nr
eg JR 4               &18 &04
eg IR -1              &18 &FF
```

Immediately an advantage of the relative jump becomes apparent – it only takes two bytes to store it (the instruction and the offset) whereas the absolute instruction takes three. The main disadvantage is that the offset of the relative can only reach about 127 memory locations of either side of the instruction while the absol-

ute jump can access the entire memory – more than 64000 locations. Working out the offset for the relative instruction is always a pain, but if a program is written completely with relative addresses it can be placed anywhere in memory. You pays your money and you takes your choice.

You may remember from your knowledge of Basic that in order to allow a program to make decisions you used the IF and THEN statements, perhaps with the odd GOTO or GOSUB. A condition was checked for between the IF and THEN which controlled what happened next. Such as:

If x=62 THEN PRINT "Wow! You picked the lucky number!"

or

If x=62 THEN GOTO 2000:REM My PRINT statement is at line 2000

I'm sure you get the idea. In machine




code there are no IF or THEN instructions, which is a great pity. However, making our own is not too difficult – but it's a lot easier if you have bought an assembler by now! To be honest, if you have struggled this far through the wonders of machine code, you are either interested in me or the editor. That being the case, you should have thought about buying one by now. There are some in the Public Domain (ie free) and some supplied with the wonderful CP/M (yawn) operating system. Check Wacci for details.

The major instruction is COMPARE or CP. It always uses the Accumulator (A) register. When you use CP, it checks the contents of the Accumulator with whatever other number you supplied. Not only does it check to see if they are equal, but it decides which is the greater or lesser. All from one instruction – what a bargain! To inform us of its decision, the CP instruction sets or resets some little flags for us.

A flag is an internal signal that we can examine to check a special result. It's the CPU's way of passing information to us. Whenever we press some money into its metaphoric palm, the flags metaphorically whisper what we want to know. Flags are binary – they can only be in one or two states. These states are called Texas and Nebraska. (No they're not. That was a weak joke. I thought things were getting too serious here). These states are called Set and Reset.

The most important flat is the zero flag, usually shortened to Z. The Z flag does a wonderful thing for us. It checks for zero. (Staggers back in amazement and trips over the dog). However, in typical computer style, that does not exactly mean what it sounds like. Look at this short program:

```
LD A,10
CP 10
```

The CP instruction looks at the contents of A (ie 10) and compares it with the value we supplied next to it (ie 10). Compare works by subtracting the value from the accumulator, and in this case the answer is zero.

"Hey!" says the Zero flag, "that's my cue! Here I am, here I am! I'm set! I'm set!"

In the next example, Mr Z Flag is depressed because the answer is not zero, and so he refuses to be set. He is reset.

```
LD A,10
CP 9
```

Now we are on the final stretch. To create an IF/THEN construct, we must somehow combine the jumping instructions with all that testing the flags business. Any guess what? Right – some new instructions.

| | | |
|---|---|---|
| **Relative Ones** | | |
| JR Z,n | &28 &nn | Jump Relative if Z flag is SET |
| JR NZ,n | &20 &nn | Jump Relative if Z flag is RESET |
| **Absolute Ones** | | |
| JP Z,&abcd | &ca &cd &ab | Jump to &abcd if Z flag is SET |
| JP NZ,&abcd | &c2 &cd &ab | Jump to &abcd if Z flag is RESET |

So here is our first non-linear program. It is also our first experience of a 'label'. These labels are phenomenally useful. An ingenious concept, invented by a postman called Mr. Label in the mid 1950's.

"Instead of trying to remember lots of tricky addresses," he said, "why not just give them a name, and remember those instead."

The program below is an example of decision making. There are two places where the program may branch depending on the contents of the memory location &9000. As an added bonus, there is a third option which is carried out only if neither of the branches are followed.

The program:

```
          LD A,(&9000)   ;If the contents of &9000 are
          CP 10          ;equal to 10 then jump
          JP Z,LABEL1    ;to this absolute address . .
          CP 11          ;If 11 then jump here
          JP Z,LABEL2    ;to this address . .
          LD A,0         Otherwise put a zero into
          LD (&9001),A   ;this address and then go to
          JP STOP        ;the place to stop.

LABEL 1:  LD A,42        ;This short routine puts 42 into
          LD (&9001),A   ;the memory location &9001
          JP STOP        ;and stops

LABEL 2:  LD A,67        ;This short routine puts 67 into
          LD (&9001),A   the memory location &9001
          JP STOP        ;and stops
```

Next month we'll look at this option and how to get it to loop back on itself. Much more interesting I'd say.

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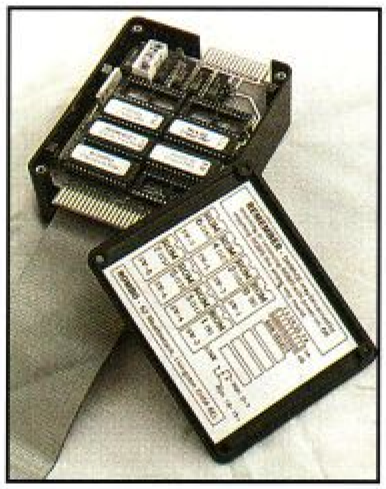
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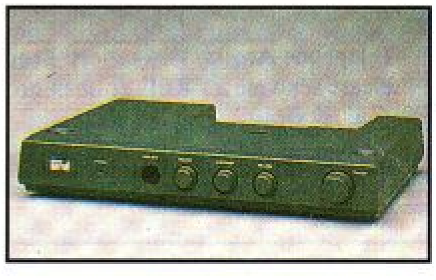
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# Getting the message with Focal Point

Gordon Bates

## continues his communications extravaganza with a few notes on replying to electronic mail.



Last month we went through the first part of the essentials of using the Focal Point Bulletin Board System. We looked at logging on, looking at the New User Menu the Main Menu. This month we continue with a discussion of replying to electronic mail.

When you reply to electronic mail, and you don't delete the original message, the fact that you replied is recorded in the original message's header. The next time you read the message, it will display the number of times you've replied to that message as part of the header information. This helps you keep track of which messages have been replied to. After writing the reply, you return to the read command in progress, and begin reading the next message in sequence.

[K]ill – this option appears only when reading public messages, and only if the person reading the message has permission to delete it. Selecting this option allows you to delete the message just read. It will ask you first if you really want to delete the message; type Y to kill it, N to keep it.

After deleting the message, the next message in sequence is displayed.

[F]orward – the Forward subcommand is used to forward a copy of the message you just read to another place on the bulletin board. You may forward a message to a public message subboard or to a particular user's mailbox. Pressing F prompts you with: Forward to [U]ser or [S]ubboard?

If you wish to forward the message to a public domain message board, press S; the BBS will then prompt you to enter the subboard letter of the board you wish to forward to. To forward the message to a user, type U; you will then be prompted to enter the name of the user to whom you wish to send the message.

Forwarding a message to a subboard is the same as Posting the message on that subboard. Forwarding to a user is the same as sending the message to that user via the Mail command.

After reading each message in your electronic mailbox, and responding to it with one of the above subcommands, an additional prompt appears: Delete this message (Y/N)?

Press Y if you wish to delete the message you just read; or N if you don't want to delete the message. Note that if you selected the [F]orward subcommand before deleting the message, the deletion will occur after the message is forwarded to its destination.

Because no ANSI mode is available to CPC users, the line oriented editor is automatically used by the BBS whenever you post a message or bulletin, EDIT an existing message, or send a message via the MAIL command.

When the line editor is running, you'll see the message; "Enter text; type a period (.) when done. Max NNN lines.", followed by the number "01". NN is the maximum number of lines that you may enter into the message (it can be anywhere from 5 to 250).

You would now begin typing your message. As you type, you can correct errors by pressing the BACKSPACE key. There's no need to press the RETURN key when you reach the end of a line; instead the editor automatically performs "word wrapping", that is, it breaks the line at the nearest word boundary and moves the last word on the line down to the next line. As you type, you'll see the line numbers to the left of your text increase.

When you are done entering text, press the RETURN key once (so that the cursor is directly to the right of a line number). Then type a single full stop (.), and press RETURN again. This takes you out of the text insertion mode and places you at the line editor's subcommand prompt, which looks like this: Cont Edit Ins Del List Abort Save –?

You can now enter an editor subcommand by typing the first letter of one of the above command words at the prompt. The commands work as follows:

Save – this is the command that saves the message you just entered (or edited) onto the disc. You use this command when you are done with the message, unless you've changed your mind and decided not to send the message at all.

Abort – the abort subcommand can be used to throw away the message in

case you decide you don't want to send it. It will prompt you to make sure that's what you really want to do, in order to ensure that you don't abort the message by mistake.

Cont – the cont, or continue, subcommand lets you continue entering lines at the end of the message. It places you back into the text entry mode at the next highest line number.

List – this command can be used to list, or review, the message just entered. It will prompt you for a line number; if you enter 1, or simply press RETURN, the message is listed from line 1 to the end. If you wish the listing to start at a specific line number, you can enter that line number.

You can pause the listing with S, and cancel it with C.

Ins – this is the insert command. It lets you insert one or more new lines of text in between two existing lines. You are prompted to enter the number of the line that you want to insert BEFORE: for example, to insert between lines 11 and 12, you'd give line 12 as the target of the insertion.

Once in insert mode, you can type as many new lines as you like. To exit back to the subcommand prompt, once again enter a period at the beginning of a new line.

Del – the delete command lets you delete one or more entire lines of text from the message. It prompts you to enter the starting and ending line numbers of the range of lines that you want to remove.

Edit – this command gives you a way to edit the individual characters on a line. It prompts you for the line number of the line you wish to edit, and gives you a choice: Change or Retype?

Respond by pressing C to change the line, or R to retype it. Retyping simply lets you re-enter the entire line of text from scratch. You can only retype one line at a time.

Change gives you the opportunity to edit portions of the line without having to re-key the entire line. It works by prompting you for a "source" and a "replacement" string. The "source" is a portion of the text, exactly as it appears in the line. The "replacement" is a string of text that will replace the source string – just like your usual word processor.

Although the corrected line is not displayed on the screen, you could view it by using the List subcommand. You can replace a string with a string of a different length (or even a null string, in which case the original text is deleted entirely). However, the total length of the line cannot exceed 76 characters.

The line editor can also be used to edit existing messages via the Edit command on the main menu. When used in this fashion, it operates identically to the above description, except that you'll go right to the "Cont Edit List . . ." prompt rather than to the "Enter Text" prompt. Saving the message results in the edited version of the message replacing the old version on disc. If you abort the edit, the changes you've made to the message, if any, are not saved; the original message is left intact.

We'll go into the files area commands another time. Please feel free to enjoy Focal Point, and don't be afraid to ask for help if you need it – you can leave messages for all of the writers whose purple prose appears on these pages!

# NEXT MONTH

## EDUCATION ANALYSIS

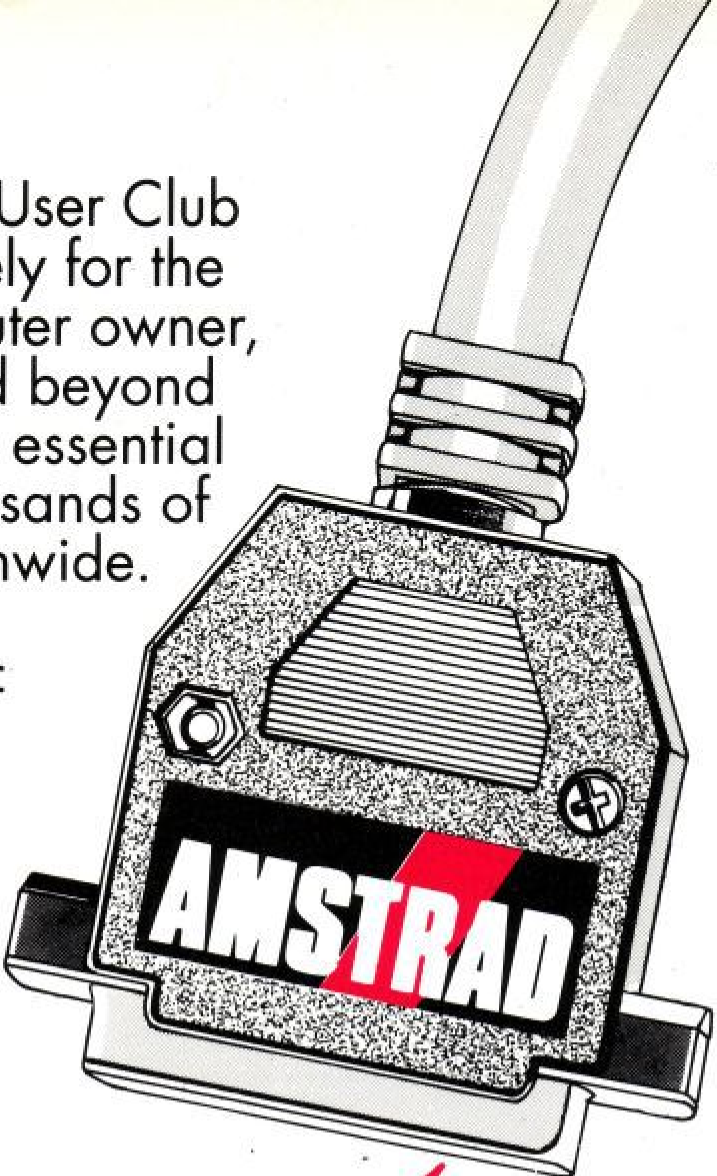
David Dorn continues with his three-part education feature with the first of two articles analysing a selection of educational packages. He puts his teaching experience to good use to put together the most comprehensive guide to education on the CPC ever attempted.

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